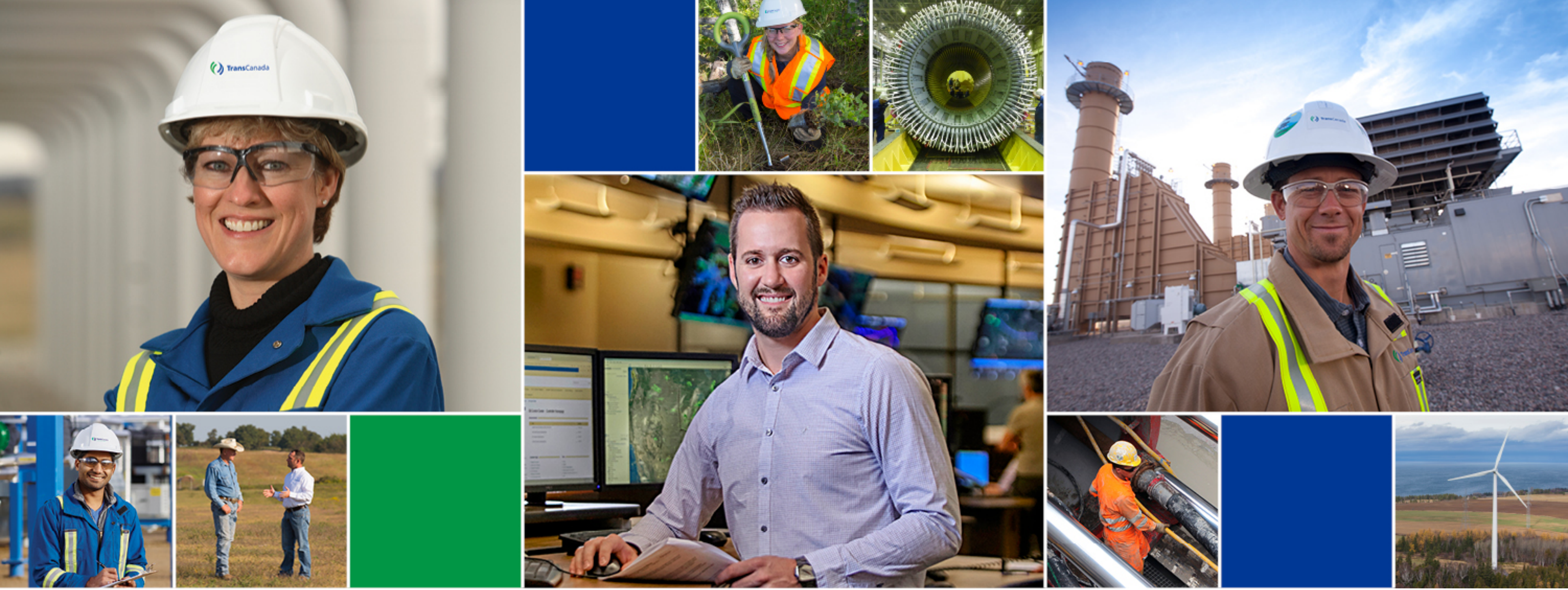

First Quarter 2018 Conference Call

April 27, 2018

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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 and the future growth of our core businesses.

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 priorities and whether they will yield the expected benefits, the operating performance of our pipeline and energy assets, amount of capacity sold and rates achieved in our pipeline businesses, the availability and price of energy commodities, the amount of capacity payments and revenues from our energy business, regulatory decisions and outcomes, including those related to recent FERC policy changes, outcomes of legal proceedings, including arbitration and insurance claims, performance and credit risk of our counterparties, changes in market commodity prices, changes in the regulatory environment, changes in the political environment, changes in environmental and other laws and regulations, competitive factors in the pipeline and energy sectors, construction and completion of capital projects, costs for labour, equipment and materials, access to capital markets, including the economic benefit of asset drop downs to TC PipeLines, LP, interest, tax and foreign exchange rates, including the impact of U.S. Tax Reform, weather, cyber security, technological developments, economic conditions in North America as well as globally. You can read more about these risks and others in our April 26, 2018 Quarterly Report to Shareholders and 2017 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 Common 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 Common Share. Reconciliations to the most closely related GAAP measures are included in this presentation and in our April 26, 2018 Quarterly Report to Shareholders filed with Canadian securities regulators and the SEC and available at www.transcanada.com.

Russ Girling
President & CEO

First Quarter 2018 Highlights

Continued to generate record financial results

- Comparable earnings were $0.98 per share, a 21 per cent increase over last year

Declared quarterly dividend of $0.69 per common share

- Equivalent to an annualized $2.76 per share, a 10 per cent increase over 2017

Advanced $21 billion near-term capital program

- Placed the US$1.6 billion Leach XPress project, US$0.3 billion Cameron Access project and NGTL Expansion projects of approximately $260 million into service
- Announced $2.5 billion of NGTL expansions

Progressed over $20 billion of medium- to longer-term projects under development

- Includes Keystone XL, Coastal GasLink and Bruce Power Life Extension program

Raised $649 million of common equity to help fund capital program

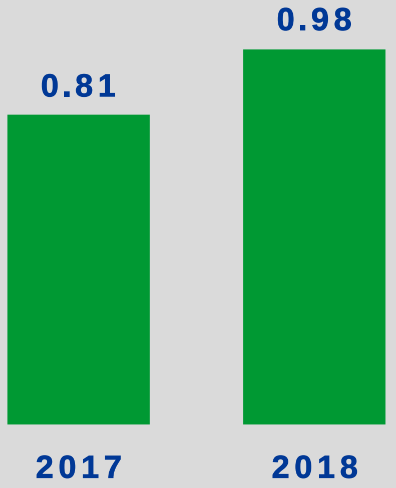
- Included $234 million of DRP proceeds and $415 million under the ATM program

Successfully Advanced our Strategic Priorities

Financial Highlights – Three Months Ended March 31 (Non-GAAP)

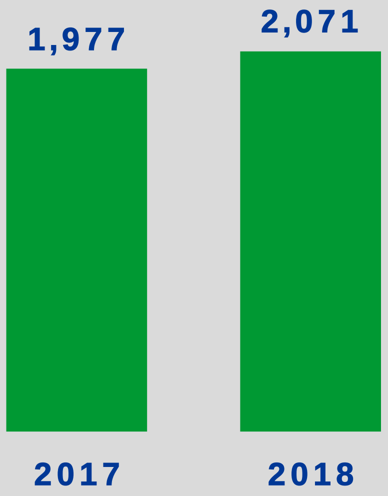
Comparable Earnings per Share*
(Dollars)

21% Increase



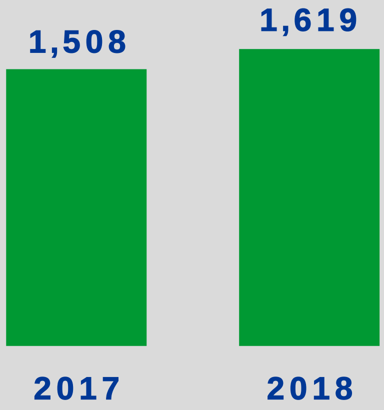
Comparable EBITDA*
($Millions)

5% Increase



Comparable Funds Generated from Operations*
($Millions)

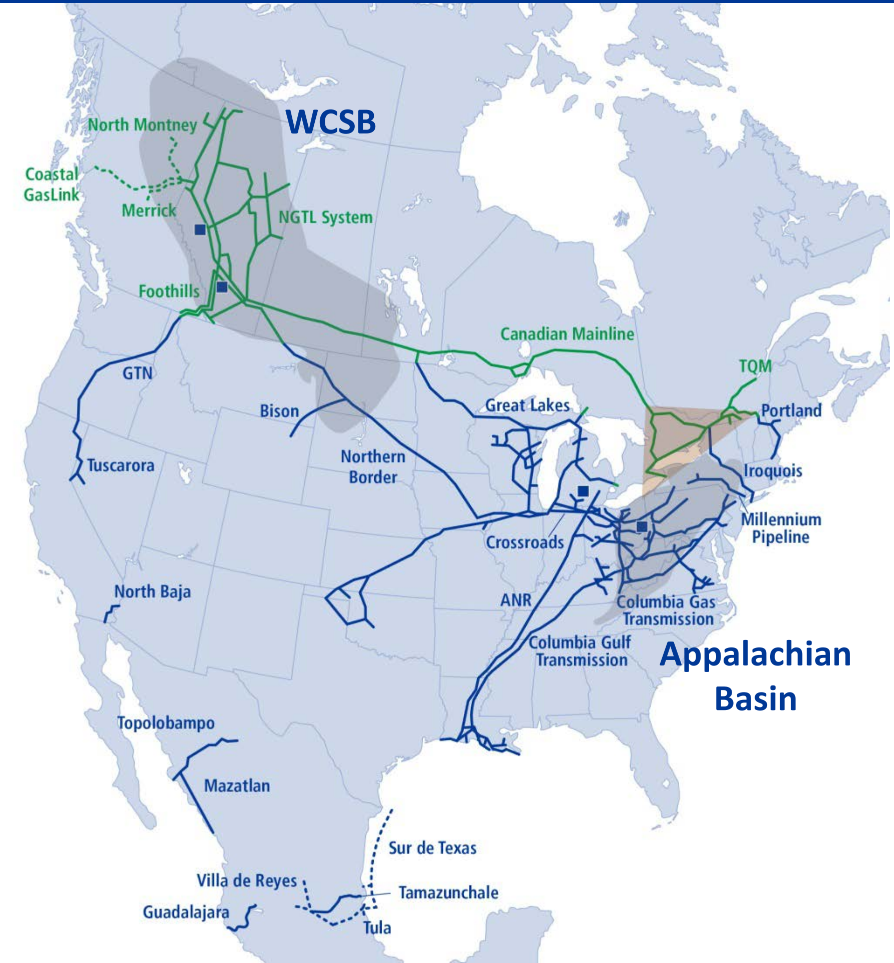
7% Increase



Performance Highlights Diversified, Low Risk Business Strategy

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

Natural Gas Pipelines Recent Developments



Canadian Natural Gas Pipelines

- Advancing $7.4 billion capital program including recently announced $2.5 billion for NGTL 2021 expansions
- NGTL 2018-2019 Revenue Requirement Settlement filed for approval with NEB
- Coastal GasLink FID expected by year-end

U.S. Natural Gas Pipelines

- Progressing US$6.1 billion capital program
- Leach XPress and Cameron Access entered service

Mexico Natural Gas Pipelines

- Advancing US$2.8 billion capital program
- Sur de Texas and Villa de Reyes expected in-service late-2018; Tula expected in-service 2019

Natural Gas Pipelines Operating Near Full Capacity

FERC Actions

March 15, 2018 FERC Actions Include:

- Revised Policy Statement - No longer permits MLPs to recover income tax allowance in cost of service rates
- Notice of Proposed Rulemaking (NOPR) - Proposes process to address impact of federal income tax rate reduction and revised Policy Statement for MLPs on interstate pipelines ratemaking

Response and Next Steps

- Filed Request for Clarification and If Necessary Rehearing of the FERC Policy Statement
- Submitted comments on the NOPR; expect FERC to issue final order(s) in late summer or early fall 2018

Implications if Enacted as Proposed

TransCanada

- Expect no material impact to earnings and cash flow from directly-held U.S. natural gas pipelines
- Drop downs to TC PipeLines, LP are not considered a viable funding lever at this time
  - Not a material funding source in prior guidance; numerous other levers available

TC PipeLines, LP

- Pipelines owned through the MLP could be materially adversely impacted in the absence of mitigation
- Ownership in TC PipeLines, LP of 25% therefore impact not expected to be significant to TransCanada's consolidated earnings or cash flow

Expect No Material Financial Impact to TransCanada

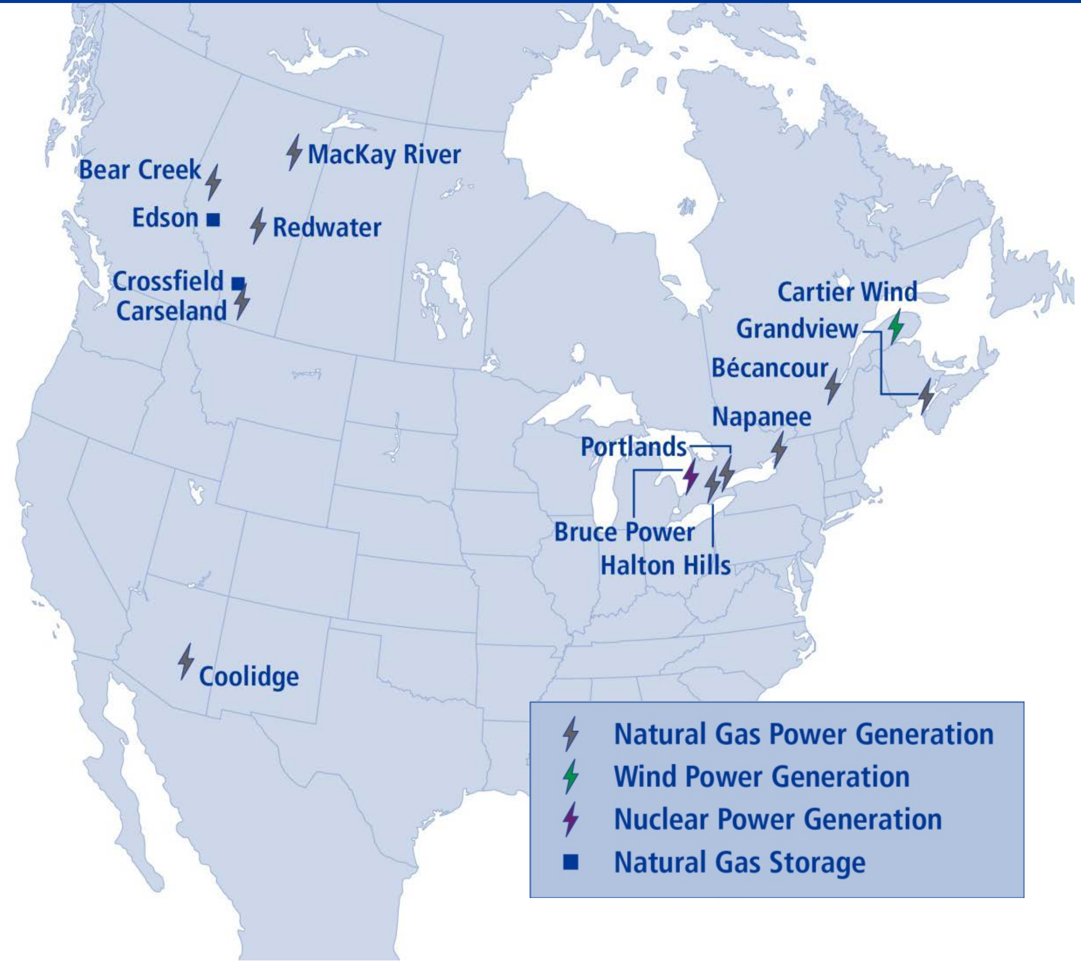
Liquids Pipelines Recent Developments

Intra-Alberta Pipelines

- Grand Rapids and Northern Courier placed in-service in second half of 2017
- White Spruce expected to enter service in 2019

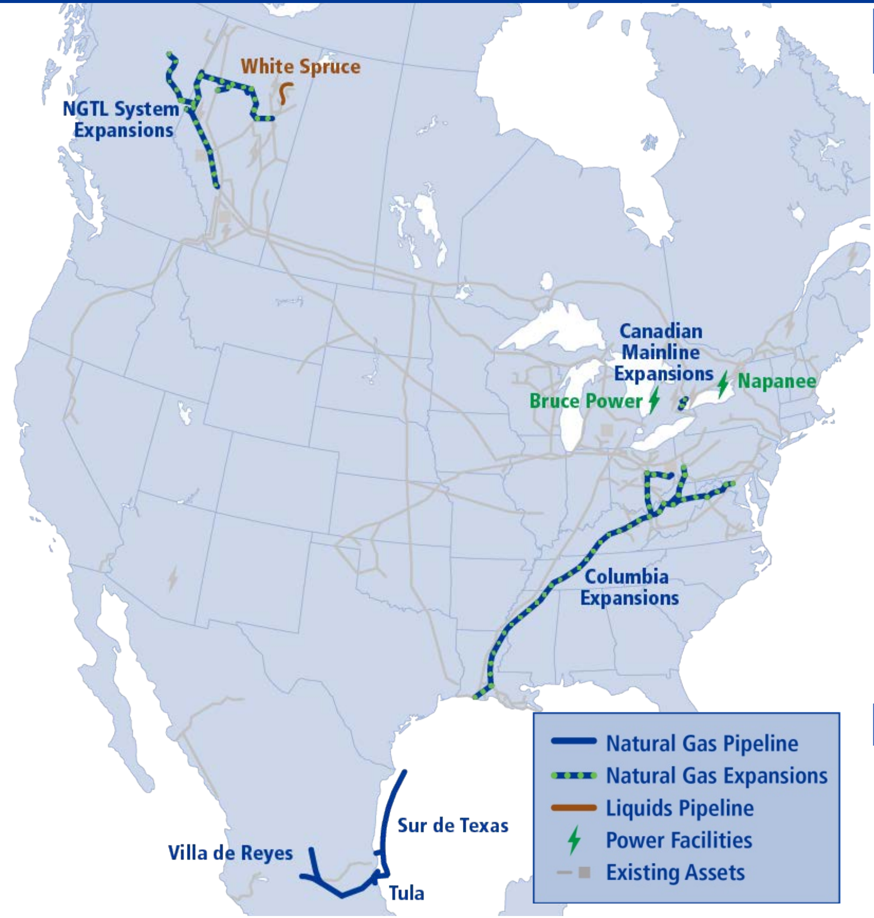
Advancing Keystone XL

- Nebraska Supreme Court to hear appeal case against Public Service Commission approval of an alternative route
- Working collaboratively with landowners to obtain the necessary easements in Nebraska for the approved route
- Commercial support confirmed; 20-year commitments underpin return of and on total capital
- Primary construction is expected to begin in 2019 and will take approximately two years to complete



- **Construction progressing on the 900 MW Napanee project**
  - Expected in-service in fourth quarter 2018
- **Preparation work continues on the Bruce Power life extension program**
  - First Major Component Replacement program to begin in 2020
  - Cost to be finalized October 2018 (IESO refurbishment lock-in date)
- **Completed sale of U.S. power retail contracts as part of the continued wind down of our U.S. power marketing operations**

Advancing $21 Billion Near-Term Capital Program

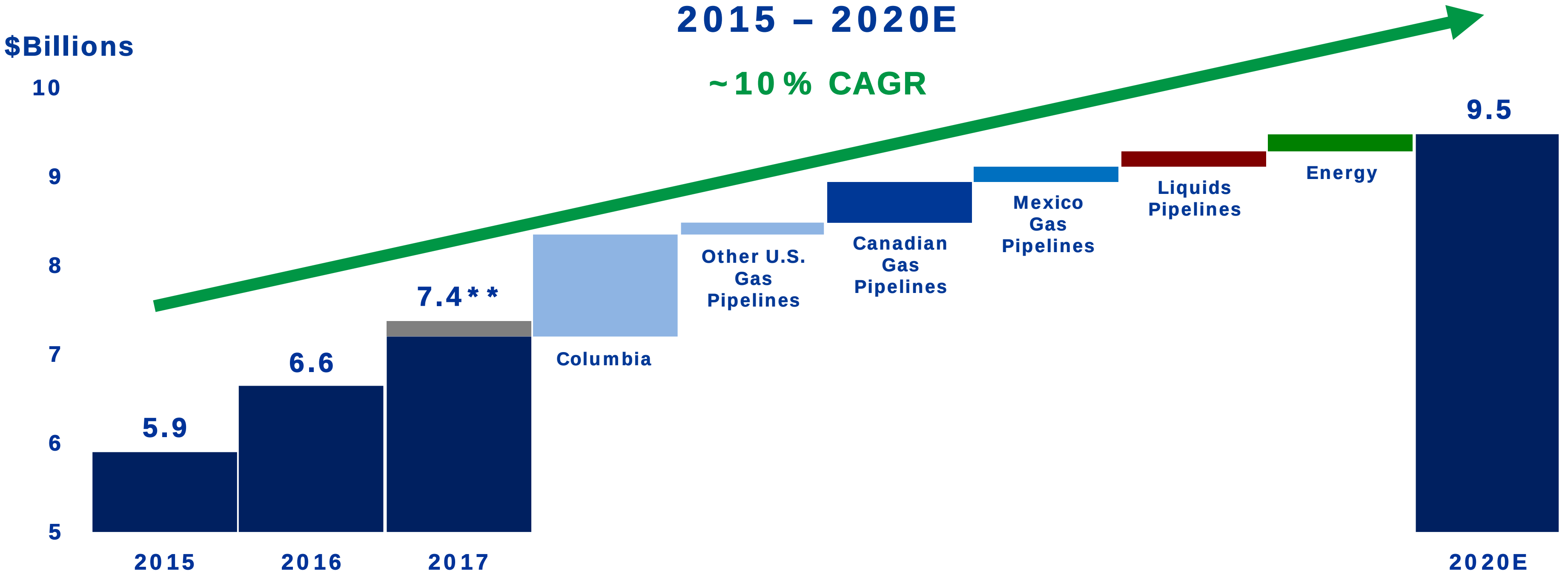


Project	Estimated Capital Cost*	Invested to Date*	Expected In-Service Date*
Canadian Mainline	0.2	-	2018-2021
NGTL System	0.6	0.4	2018
WB XPress	US 0.9	US 0.5	2018
Mountaineer XPress	US 3.0	US 0.7	2018
Gulf XPress	US 0.6	US 0.3	2018
Villa de Reyes	US 0.8	US 0.5	2018
Sur de Texas**	US 1.3	US 1.1	2018
Napanee	1.3	1.1	2018
Bruce Power Life Extension**	0.9	0.3	Up to 2020
Modernization II	US 1.1	US 0.2	2018-2020
Other U.S. Gas**	US 0.3	US 0.1	2018-2020
White Spruce	0.2	-	2019
NGTL System	2.4	0.4	2019
Tula	US 0.7	US 0.5	2019
Buckeye XPress	US 0.2	-	2020
NGTL System	1.7	0.1	2020
NGTL System	2.5	-	2021
Foreign Exchange Impact (1.29 exchange rate)	2.6	1.1	-
Total Canadian Equivalent	**21.3**	**7.3**	

**Billions of dollars. Certain projects are subject to various conditions including corporate and regulatory approvals.*
***Our proportionate share.*

$21 Billion of Near-Term Projects Drive Significant Growth

Comparable EBITDA Outlook* 2015 – 2020E

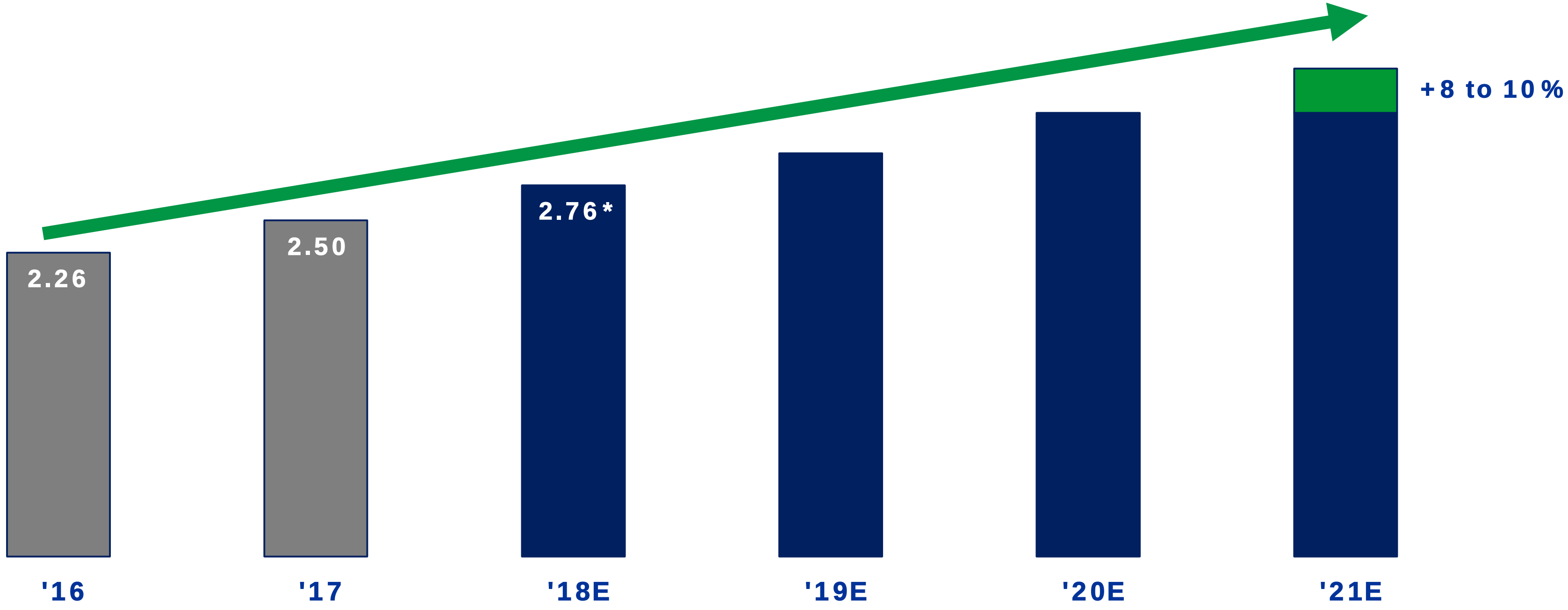


Advancing Over $20 Billion of Additional Projects that could Extend Growth Beyond 2020

** Includes existing assets, non-controlling interests in U.S. Natural Gas Pipelines and $21 billion of near-term projects subject to various conditions including corporate and regulatory approvals. Does not include potential impact of March 15, 2018 FERC actions. Comparable EBITDA is a non-GAAP measure. See the non-GAAP measures slide at the front of this presentation for more information. **Grey bar indicates EBITDA from Energy assets sold.*

Dividend Growth Outlook Through 2021

Annual Growth at the Upper End of 8 to 10 Percent Expected to End of Decade
Further 8 to 10 Percent Growth Anticipated in 2021



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

*Annualized based on most recent quarterly declaration

Key Takeaways

Proven Strategy – Low Risk Business Model

- Over 95% of Comparable EBITDA from regulated assets or long-term contracts

Diversified High-Quality Assets Provide Multiple Platforms for Growth

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

Businesses Performing Very Well

- Record performance continued in First Quarter 2018

Visible Growth

- Advancing $21 billion of near-term growth projects
- Over $20 billion of medium- to longer-term projects in development
- Additional organic growth expected from existing businesses

Dividend Poised to Grow

- Increased dividend by 10.4% in 2018 to $2.76 on an annualized basis
- Expect annual growth to continue at upper end of 8 to 10% range through 2020
- Additional growth of 8 to 10% anticipated in 2021

Financial Strength and Flexibility

- Numerous levers available to fund growth

Don Marchand

Executive Vice President & CFO

Consolidated Results of Operations
(unaudited) (millions of dollars, except per share amounts)

	Three months ended March 31	
	2018	2017
Net Income Attributable to Common Shares	734	643
Specific items (net of tax):		
Risk management activities	136	21
Integration and acquisition related costs - Columbia	-	24
Loss on sales of U.S. Northeast power generation assets	-	10
Keystone XL asset costs	-	7
Keystone XL income tax recoveries	-	(7)
Comparable Earnings[(1)]	870	698
Net Income Per Common Share	$0.83	$0.74
Specific items (net of tax):		
Risk management activities	0.15	0.03
Integration and acquisition related costs - Columbia	-	0.03
Loss on sales of U.S. Northeast power generation assets	-	0.01
Keystone XL asset costs	-	0.01
Keystone XL income tax recoveries	-	(0.01)
Comparable Earnings Per Common Share[(1)]	$0.98	$0.81
Weighted Average Basic Common Shares Outstanding (millions)	885	866

(1) Non-GAAP measure. For additional information on these items see the April 26, 2018 Quarterly Report to Shareholders

Business Segment Results[1]
(unaudited) (millions of dollars)

	Three months ended March 31	
	2018	2017
Comparable EBITDA[2]		
Canadian Natural Gas Pipelines	494	504
U.S. Natural Gas Pipelines	804	720
Mexico Natural Gas Pipelines	160	140
Liquids Pipelines	431	312
Energy	184	305
Corporate	(2)	(4)
Total	2,071	1,977

First quarter 2018 comparable EBITDA increased $94 million compared to same period in 2017. Principal variances included:

- **U.S. Natural Gas Pipelines**
  - Higher primarily due to Columbia Gas and Columbia Gulf projects entering service, additional contract sales on ANR and Great Lakes and favourable commodity prices for Midstream
- **Liquids Pipelines**
  - Higher mainly due to Grand Rapids and Northern Courier commencing operations in second half 2017, increased volumes on the Keystone Pipeline System and a higher contribution from liquids marketing
- **Energy**
  - Lower due to the sale of U.S. Northeast Power and Ontario Solar assets in 2017 and a lower contribution from Bruce Power due to reduced volumes from higher outage days

(1) For more information, see the April 26, 2018 Quarterly Report to Shareholders; (2) Non-GAAP measure. For additional information on these items see the April 26, 2018 Quarterly Report to Shareholders

Other Income Statement Items[1]
(unaudited) (millions of dollars)

	Three months ended March 31	
	2018	2017
Comparable EBITDA[2]	2,071	1,977
Depreciation and amortization	(535)	(510)
Comparable EBIT[2]	1,536	1,467
Interest expense	(527)	(500)
Allowance for funds used during construction	105	101
Interest income and other[3]	63	5
Income tax expense[3]	(173)	(244)
Net income attributable to non-controlling interests[3]	(94)	(90)
Preferred share dividends	(40)	(41)
Comparable Earnings[2]	870	698

Principal variances between first quarter 2018 and the same period in 2017 included:

- **Interest expense**
  - Higher due to new debt issuances net of maturities and lower capitalized interest, partially offset by repayment of Columbia bridge facilities in 2017 and a weaker U.S. dollar
- **Interest income and other[3]**
  - Higher due primarily to an inter-affiliate loan receivable from the Sur de Texas joint venture offsetting corresponding interest expense in Mexico Natural Gas Pipelines EBITDA and realized hedging gains in 2018
- **Income tax expense[3]**
  - Lower primarily due to reduced rates as a result of U.S. Tax Reform and lower flow-through income taxes in Canadian rate-regulated pipelines

(1) For more information, see the April 26, 2018 Quarterly Report to Shareholders; (2) Non-GAAP measures. For additional information on these items see the April 26, 2018 Quarterly Report to Shareholders; (3) Excludes specific items to arrive at comparable earnings

Comparable Distributable Cash Flow

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

	Three months ended March 31	
	2018	2017
Comparable Funds Generated From Operations[1]	1,619	1,508
Dividends on preferred shares	(39)	(39)
Distributions paid to non-controlling interests	(69)	(80)
Maintenance capital expenditures including equity investments		
Recoverable in future tolls	(224)	(137)
Other	(64)	(49)
Comparable Distributable Cash Flow[1]		
Reflecting all maintenance capital expenditures	1,223	1,203
Reflecting only non-recoverable maintenance capital expenditures	1,447	1,340
Comparable Distributable Cash Flow Per Common Share[1]		
Reflecting all maintenance capital expenditures	$1.38	$1.39
Reflecting only non-recoverable maintenance capital expenditures	$1.64	$1.55
Dividends Declared per Common Share	$0.69	$0.625
Coverage Ratio		
Reflecting all maintenance capital expenditures	2.0	2.2
Reflecting only non-recoverable maintenance capital expenditures	2.4	2.5

(1) Non-GAAP measure. For additional information on these items see the April 26, 2018 Quarterly Report to Shareholders

Funding Program Continued to Advance in First Quarter

Strong, predictable and growing cash flow from operations

- Comparable funds generated from operations of $1.6 billion in the quarter
- $1.3 billion of cash and cash equivalents on hand at March 31

Dividend Reinvestment Plan participation remains significant

- Approximately 38 per cent or $234 million of common dividends reinvested in common shares in the quarter

At-the-Market (ATM) equity issuance supports simultaneous large capital program and de-leveraging

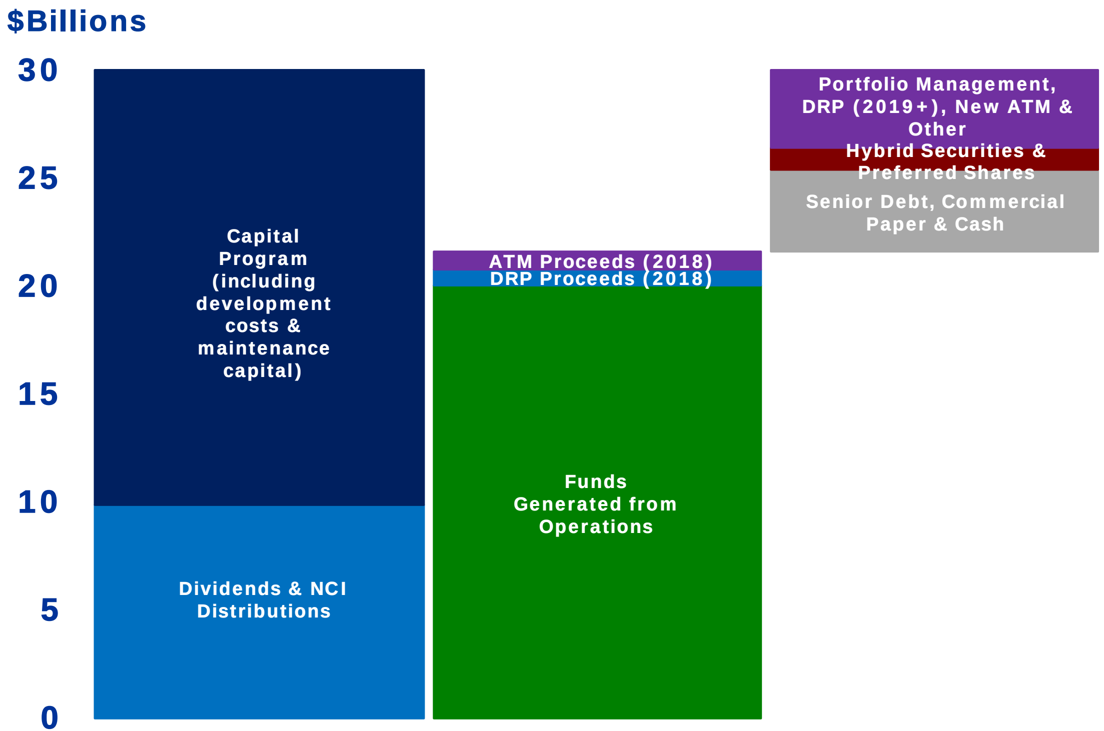
- Issued 5.8 million common shares at an average price of $56.51 per share for gross proceeds of $329 million in the quarter
- Additional 1.6 million common shares issued in April, bringing year-to-date gross proceeds to $415 million

Bruce Power issued senior notes in capital markets

- Resulted in $121 million of related distributions to TransCanada

Well Positioned to Finance Industry Leading Capital Program with Multiple Attractive Funding Options

Funding Program Through 2020



2018 – 2020 Outlook

Numerous Levers Available to Fund Near-Term Capital Program

- Strong, predictable and growing cash flow from operations
- Dividend Reinvestment Plan (DRP)
- Access to capital markets including:
  - Senior debt
  - Hybrid securities and preferred shares
- Portfolio management
- Potential further project recoveries
- At-The-Market (ATM) program

Funding Program Manageable

Completion of $21 Billion Near-Term Capital Program Does Not Require Discrete Equity

Key Takeaways

Track Record of Delivering Long-Term Shareholder Value

13% average annual return since 2000

Visible Growth Portfolio

$21 billion to 2020
Additional opportunity set includes over $20 billion of medium- to longer-term projects

Attractive, Growing Dividend

Dividend raised 10.4%
5.0% yield
8-10% expected CAGR through 2021

Strong Financial Position

Numerous levers available to fund future growth

Performance Highlights Diversified, Low Risk Business Strategy

Question & Answer Period


Russ Girling


Don Marchand

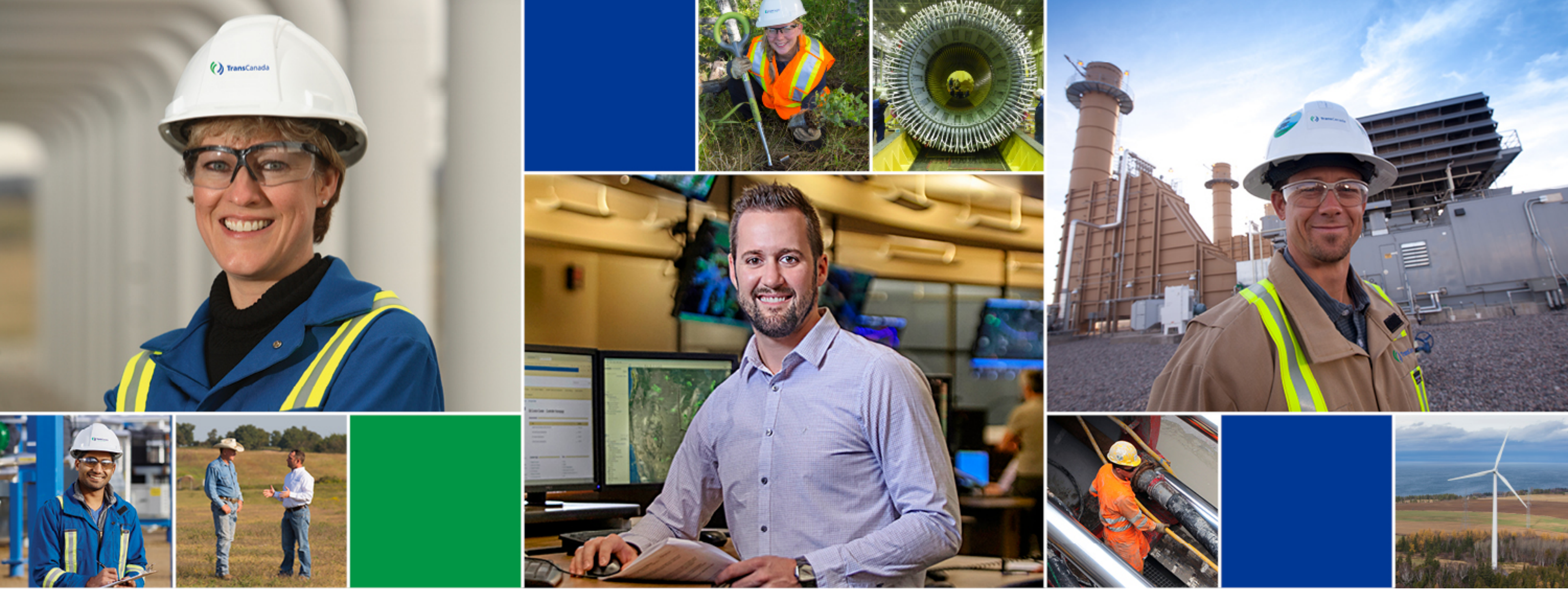

Karl Johannson


Stan Chapman


Paul Miller


Glenn Menuz


David Moneta



First Quarter 2018 Conference Call

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Appendix – Reconciliation of Non-GAAP Measures (millions of dollars)

	Three months ended March 31	
	2018	2017
Comparable EBITDA[1]	2,071	1,977
Depreciation and amortization	(535)	(510)
Comparable EBIT[1]	1,536	1,467
Specific items:		
Risk management activities	(109)	(56)
Foreign exchange loss – inter-affiliate loan	(79)	-
Integration and acquisition related costs - Columbia	-	(39)
Loss on sales of U.S. Northeast power generation assets	-	(11)
Keystone XL asset costs	-	(8)
Segmented Earnings	1,348	1,353

(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.

Appendix – Reconciliation of Non-GAAP Measures continued (millions of dollars)

	Three months ended March 31	
	2018	2017
Net Cash Provided by Operations	1,412	1,302
Increase in operating working capital	207	155
Funds Generated from Operations(1)	1,619	1,457
Specific items:		
Integration and acquisition related costs – Columbia	-	32
Keystone XL asset costs	-	8
Net loss on sales of U.S. Northeast power generation assets	-	11
Comparable Funds Generated from Operations(1)	1,619	1,508

(1) Funds Generated from Operations 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.