

ROYAL BANK OF CANADA  
Form 424B2  
February 04, 2019

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Registration No. 333-227001

Pricing Supplement No. WFC132 (to Prospectus and Prospectus Supplement each dated September 7, 2018)

Royal Bank of Canada  
\$2,375,000

Market Linked Securities—Leveraged Upside Participation to a Cap and Fixed Percentage Buffered Downside Principal at Risk Securities Linked to the Energy Select Sector SPDR® Fund, due August 5, 2022

The securities described in this pricing supplement are issued by Royal Bank of Canada (Royal Bank of Canada or the Issuer), and are Senior Global Medium-Term Notes, Series H of the Issuer, as described in the prospectus supplement and prospectus each dated September 7, 2018.

Agent: Wells Fargo Securities, LLC. The agent may make sales through its affiliates or selling agents.

Principal Amount: Each security will have a principal amount of \$1,000. The securities are not principal-protected. You may lose up to 85% of the principal amount of the securities.

Pricing Date: January 31, 2019

Original Issue Date: February 5, 2019

Valuation Date: July 29, 2022, subject to postponement as described below.

Maturity Date: August 5, 2022, subject to postponement as described below.

Interest: We will not pay you interest during the term of the securities.

Fund: The return on the securities is linked to the performance of the Energy Select Sector SPDR® Fund (Bloomberg symbol: XLE), which we refer to as the Fund.

Payment at Maturity: The amount you receive at maturity, for each security you own, will depend upon the change in the price of the Fund based on the Final Fund Price relative to the Initial Fund Price, and whether or not the Final Fund Price is below the Buffer Price.

(i) If the Final Fund Price is greater than the Initial Fund Price, the maturity payment amount per security will equal the lesser of:

(a)  $\$1,000 + (\$1,000 \times \frac{\text{Final Fund Price} - \text{Initial Fund Price}}{\text{Initial Fund Price}} \times \text{Participation Rate})$ ; and

(b) the maximum maturity payment amount

(ii) If the Final Fund Price is less than or equal to the Initial Fund Price but greater than or equal to the Buffer Price, the maturity payment amount per security will equal \$1,000.

(iii) If the Final Fund Price is less than the Buffer Price, the maturity payment amount per security will equal:

$\$1,000 - (\$1,000 \times \frac{\text{Buffer Price} - \text{Final Fund Price}}{\text{Initial Fund Price}})$

In such a case, you may lose up to 85% of your principal.

Maximum Maturity Payment Amount: \$1,480.00 per security

Participation Rate: 150%

Initial Fund Price: \$63.78, which was the fund closing price of the Fund on the pricing date.

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Final Fund Price: The fund closing price of the Fund on the valuation date.  
Buffer Price: \$54.213, which is 85% of the Initial Fund Price.  
Listing: The securities will not be listed on any securities exchange.  
CUSIP Number: 78013XVA3

Our initial estimated value of the securities as of the date of this document is \$946.66 per \$1,000 in principal amount, which is less than the public offering price. The market value of the securities at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. See “Risk Factors” and “Supplemental Plan of Distribution – Structuring the Securities” for further information.

The securities will be unsecured debt obligations of Royal Bank of Canada. Payments on the securities are subject to Royal Bank of Canada’s credit risk. If Royal Bank of Canada defaults on its obligations, you could lose your entire investment. No other company or entity will be responsible for payments under the securities or liable to holders of the securities in the event Royal Bank of Canada defaults under the securities. The securities will not be issued by or guaranteed by Wells Fargo Securities, LLC or any of its affiliates.

The securities will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation (the “FDIC”) or any other Canadian or U.S. government agency or instrumentality. The securities are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

For a detailed description of the terms of the securities, see “Summary Information” beginning on page PS-2 and “Specific Terms of the Securities” beginning on page PS-16. Defined terms used in this cover page are defined in “Summary Information” and “Specific Terms of the Securities.”

The securities have complex features and investing in the securities involves risks. See “Risk Factors” beginning on page PS-10 of this document and page S-1 of the accompanying prospectus supplement.

	Per Security	Total
Public Offering Price	\$1,000.00	\$2,375,000.00
Underwriting Discount and Commission <sup>(1)</sup>	\$34.60	\$82,175.00
Proceeds to Royal Bank of Canada	\$965.40	\$2,292,825.00

(1) The agent will receive an underwriting discount and commission of \$34.60 per security. Of that underwriting discount and commission, each dealer that sells securities will receive a selling concession of \$20.00 for each security that such dealer sells. Such securities dealers may include Wells Fargo Advisors (“WFA”) (the trade name of the retail brokerage business of Wells Fargo Clearing Services, LLC and Wells Fargo Advisors Financial Network, LLC). In addition to the selling concession allowed to WFA, the agent will pay \$0.75 per security of the underwriting discount and commission to WFA as a distribution expense fee for each security sold by WFA. See “Use of Proceeds and Hedging” and “Supplemental Plan of Distribution” in this pricing supplement for information regarding how we may hedge our obligations under the securities.

None of the Securities and Exchange Commission, any state securities commission or any other regulatory body has approved or disapproved of the securities or passed upon the adequacy or accuracy of this pricing supplement. Any representation to the contrary is a criminal offense.

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Wells Fargo Securities

The date of this pricing supplement is January 31, 2019

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## SUMMARY INFORMATION

This document is a pricing supplement. This pricing supplement provides specific pricing information in connection with this issuance of securities. This summary includes questions and answers that highlight selected information from this pricing supplement and the accompanying prospectus supplement and prospectus to help you understand the Market Linked Securities Leveraged Upside Participation to a Cap and Fixed Percentage Buffered Downside Principal at Risk Securities Linked to the Energy Select Sector SPDR® Fund, due August 5, 2022 (the securities). You should carefully read this pricing supplement and the accompanying prospectus supplement and prospectus to fully understand the terms of the securities and the tax and other considerations relating to the securities. You should carefully review the section “Risk Factors” in this pricing supplement and the accompanying prospectus supplement and prospectus, which highlight certain risks associated with an investment in the securities, to determine whether an investment in the securities is appropriate for you.

Unless otherwise mentioned or unless the context requires otherwise, all references in this pricing supplement to “Royal Bank of Canada”, “we”, “us” and “our” or similar references mean Royal Bank of Canada. Capitalized terms used in this pricing supplement without definition have the meanings given to them in the accompanying prospectus supplement and prospectus.

What are the securities?

The securities offered by this pricing supplement will be issued by Royal Bank of Canada and will mature on August 5, 2022. The return on the securities, if any, will be linked to the performance of the Energy Select Sector SPDR® Fund, which we refer to as the Fund. The securities will not bear interest and no other payments will be made until maturity. You may lose up to 85% of your investment in the securities.

As discussed in the accompanying prospectus supplement, the securities are debt securities and are part of a series of debt securities entitled “Senior Global Medium-Term Notes, Series H” that Royal Bank of Canada may issue from time to time. The securities will rank equally with all other unsecured and unsubordinated debt of Royal Bank of Canada. For more details, see “Specific Terms of the Securities” beginning on page PS-16.

Each security will have a principal amount of \$1,000. Each security will be offered at an initial public offering price of \$1,000. However, on the pricing date, our initial estimated value of the securities is less than \$1,000 per security as a result of certain costs that are included in the initial public offering price. See “Risk Factors—Our initial estimated value of the securities is less than the initial public offering price” and “Supplemental Plan of Distribution—Structuring the Securities.” To the extent a market for the securities exists, you may transfer only whole securities. Royal Bank of Canada will issue the securities in the form of a master global certificate, which is held by The Depository Trust Company, also known as DTC, or its nominee. Direct and indirect participants in DTC will record your ownership of the securities.

Are the securities principal protected?

No, the securities do not guarantee any return of principal at maturity. If the Final Fund Price is less than the Buffer Price, you will be exposed on a 1-to-1 basis to declines in the price of the Fund beyond the Buffer Price. Accordingly, if the Final Fund Price is below the Buffer Price, you may lose up to 85% of your principal.

What will I receive upon maturity of the securities?

At maturity, for each security you own, you will receive a cash payment equal to the maturity payment amount. The maturity payment amount to which you will be entitled depends on the percentage change in the price of the Fund calculated based on the Final Fund Price (as defined below) relative to the Initial Fund Price (as defined below), and whether or not the Final Fund Price is below the Buffer Price (as defined below).

The maturity payment amount for each security will be determined by the calculation agent as described below:

If the Final Fund Price is greater than the Initial Fund Price, the maturity payment amount per security will equal the lesser of:

(a)  $\$1,000 + (\$1,000 \times \frac{\text{Final Fund Price} - \text{Initial Fund Price}}{\text{Initial Fund Price}} \times \text{Participation Rate})$ ; and

(b) the maximum maturity payment amount

The Participation Rate is 150%. The maximum maturity payment amount is \$1,480 per security.

If the Final Fund Price is equal to or less than the Initial Fund Price, but greater than or equal to the Buffer Price, the maturity payment amount per security will equal \$1,000.

If the Final Fund Price is less than the Buffer Price, the maturity payment amount per security will equal:

$$\$1,000 - (\$1,000 \times \frac{\text{Buffer Price} - \text{Final Fund Price}}{\text{Initial Fund Price}})$$

If the Final Fund Price is less than the Buffer Price, the amount you will receive at maturity will be less than the principal amount of the securities, and you may lose up to 85% of your principal. If the Final Fund Price is zero, the maturity payment amount will be \$150.00 per security, and you will lose 85% of your principal.

The Initial Fund Price is \$63.78, which was equal to the fund closing price of the Fund on the pricing date.

The Buffer Price is \$54.213, which is 85% of the Initial Fund Price.

The Final Fund Price will be determined by the calculation agent and will be the fund closing price of the Fund on the valuation date, determined as described in the section “Specific Terms of the Securities”.

The valuation date is July 29, 2022, subject to postponement as set forth below.

See “Specific Terms of the Securities—Fund Closing Price”, “—Closing Price” and “—Adjustment Factor” for information on determination of the fund closing price on any trading day.

You should understand that the opportunity to benefit from the possible increase in the price of the Fund through an investment in the securities is limited because the amount that you receive at maturity will never exceed the maximum maturity payment amount. The maximum maturity payment amount represents a maximum appreciation on the securities of 48.00% over the principal amount of the securities. If the Final Fund Price is less than the Buffer Price, you will lose 1% of the principal amount for each 1% that the Final Fund Price is less than the Buffer Price.

Accordingly, if the price of the Fund decreases below the Buffer Price, you will lose up to 85% of your principal.

### Hypothetical Examples

Set forth below are four hypothetical examples of the calculation of the maturity payment amount based on the following hypothetical prices (the numbers appearing in the examples below have been rounded for ease of analysis):

Hypothetical Initial Fund Price: \$100.00

Hypothetical Buffer Price: \$85.00

Maximum Maturity Payment Amount: \$1,480.00

Example 1—The hypothetical Final Fund Price is 50.00% of the hypothetical Initial Fund Price, which is below the Buffer Price:

Hypothetical Final Fund Price: \$50.00

$$\begin{aligned} \text{Maturity payment amount} & \quad \$85.00 - \$50.00 \\ \text{(per security)} & = \$1,000 - [\$1,000 \times (\frac{\$100.00}{\$100.00})] = \$650.00 \end{aligned}$$

Since the hypothetical Final Fund Price is less than the hypothetical Initial Fund Price and below the hypothetical Buffer Price, the amount you will receive at maturity will be equal to the issue price of \$1,000 per security minus \$1,000 times the difference between the hypothetical Buffer Price and the hypothetical Final Fund Price, divided by the hypothetical Initial Fund Price, and you would lose some of your principal. Since the hypothetical Final Fund Price declined by 50.00% from the hypothetical Initial Fund Price to the hypothetical Final Fund Price, your total cash payment at maturity would be \$650.00 per security, representing a 35.00% loss of the principal amount of your securities.

Example 2—The hypothetical Final Fund Price is 95.00% of the hypothetical Initial Fund Price, which is below the Initial Fund Price, but above the Buffer Price:

Since the hypothetical Final Fund Price is less than the hypothetical Initial Fund Price but greater than the hypothetical Buffer Price, the maturity payment amount per security will equal the principal amount of \$1,000.00.

Example 3—The hypothetical Final Fund Price is 110.00% of the hypothetical Initial Fund Price:

Hypothetical Final Fund Price: \$110.00

$$\begin{aligned} \text{Maturity payment amount (per security)} & = \$1,000 + (\$1,000 \times \frac{\$110.00 - \$100.00}{\$100.00} \times 150\%) \\ & = \$1,000 + \$150.00 = \$1,150.00 \end{aligned}$$

Since the hypothetical Final Fund Price is greater than the hypothetical Initial Fund Price, you would receive the principal amount of \$1,000 plus 150% of the amount of the percentage change in the price of the Fund times \$1,000, subject to the maximum maturity payment amount of \$1,480.00. As the calculation of the maturity payment amount without taking into account the maximum maturity payment amount would generate a result of \$1,150.00 per security, your maturity payment amount would not be subject to the maximum maturity payment amount of \$1,480.00 per security. Your total cash payment at maturity would be \$1,150.00 per security, representing a 15.00% total return.

Example 4—The hypothetical Final Fund Price is 140.00% of the hypothetical Initial Fund Price:

Hypothetical Final Fund Price: \$140.00

$$\begin{aligned}\text{Maturity payment amount (per security)} &= \$1,000 + \left( \$1,000 \times \frac{\$140.00 - \$100.00}{\$100.00} \times 150\% \right) \\ &= \$1,000 + \$600.00 = \$1,600.00 > \$1,480.00\end{aligned}$$

Since the hypothetical Final Fund Price is greater than the hypothetical Initial Fund Price, you would receive the principal amount of \$1,000 plus 150% of the amount of the percentage change in the price of the Fund times \$1,000, subject to the maximum maturity payment amount of \$1,480.00. Although the calculation of the maturity payment amount without taking into account the maximum maturity payment amount would generate a result of \$1,600.00 per security, your maturity payment amount would be limited to \$1,480.00 per security, representing a 48.00% total return, because the payment on the securities at maturity may not exceed the maximum maturity payment amount.

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## Hypothetical Returns

The following table is based on the maximum maturity payment amount of \$1,480.00, and assumes a hypothetical Initial Fund Price of \$100.00 and a range of hypothetical Final Fund Prices and illustrates:

- the percentage change from the hypothetical Initial Fund Price to the hypothetical Final Fund Price;
- the hypothetical maturity payment amount per security; and
- the hypothetical pre-tax total rate of return to beneficial owners of the securities.

The figures below are rounded for ease of analysis and are for purposes of illustration only. The actual maturity payment amount will depend on the Final Fund Price as determined by the calculation agent as described in this pricing supplement.

Hypothetical Final Fund Price	Hypothetical Percentage Change from the Hypothetical Initial Fund Price to the Hypothetical Final Fund Price	Hypothetical Maturity Payment Amount per Security <sup>(1)</sup>	Hypothetical Pre- Tax Total Rate of Return on the Securities
\$0.00	-100.00%	\$150.00	-85.00%
\$10.00	-90.00%	\$250.00	-75.00%
\$30.00	-70.00%	\$450.00	-55.00%
\$40.00	-60.00%	\$550.00	-45.00%
\$50.00	-50.00%	\$650.00	-35.00%
\$60.00	-40.00%	\$750.00	-25.00%
\$70.00	-30.00%	\$850.00	-15.00%
\$80.00	-20.00%	\$950.00	-5.00%
\$85.00 (2)	-15.00%	\$1,000.00	0.00%
\$90.00	-10.00%	\$1,000.00	0.00%
\$95.00	-5.00%	\$1,000.00	0.00%
\$100.00 (3)	0.00%	\$1,000.00	0.00%
\$105.00	5.00%	\$1,075.00	7.50%
\$110.00	10.00%	\$1,150.00	15.00%
\$115.00	15.00%	\$1,225.00	22.50%
\$120.00	20.00%	\$1,300.00	30.00%
\$130.00	30.00%	\$1,450.00	45.00%
\$132.00	32.00%	\$1,480.00	48.00%
\$135.00	35.00%	\$1,480.00	48.00%
\$140.00	40.00%	\$1,480.00	48.00%
\$150.00	50.00%	\$1,480.00	48.00%

(1) Based on the maximum maturity payment amount of \$1,480.00.

(2) This is the hypothetical Buffer Price.

(3) This is the hypothetical Initial Fund Price

The following graph sets forth the return at maturity for a range of hypothetical percentage changes of the Fund price, based on the maximum maturity payment amount of \$1,480.00 per \$1,000.00 security (48.00% over the principal amount).

Return Profile of Market Linked Securities —Leveraged Upside Participation to a Cap and Fixed Percentage Buffered Downside Principal at Risk Securities vs. the Fund

Who should or should not consider an investment in the securities?

We have designed the securities for investors who seek exposure to the Fund, who believe that the Fund price will increase over the term of the securities, and who want to participate in 150% of the possible appreciation of the Fund (measured by the percentage change in the price of the Fund based on the Final Fund Price relative to the Initial Fund Price), subject to the maximum maturity payment amount of 48.00% over the principal amount of the securities; who understand that, if the Final Fund Price is less than the Buffer Price, they will lose money on their investment; and who are willing to hold their securities until maturity. Investors in the securities should be willing to risk up to 85% of their investment.

The securities are not designed for, and may not be a suitable investment for, investors who are unable or unwilling to hold the securities to maturity, who seek principal protection for their investment, who are unwilling to make an investment exposed to downside performance risk of the Fund or who are unwilling to purchase securities with an initial estimated value as of the pricing date that is lower than the initial public offering price. The securities may not be a suitable investment for investors who prefer the lower risk of fixed income investments with comparable maturities issued by companies with comparable credit ratings.

What will I receive if I sell the securities prior to maturity?

The market value of the securities may fluctuate during the term of the securities. Several factors and their interrelationship will influence the market value of the securities, including the price of the Fund, dividend yields of the component common stocks held by the Fund, the time remaining to maturity of the securities, interest rates and the volatility of the Fund. Depending on the impact of these factors, you may receive less than \$1,000 per security from any sale of your securities before the maturity date of the securities and less than what you would have received had you held the securities until maturity. Assuming no change in market conditions or other relevant factors, the price, if any, at which you may be

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able to sell your securities prior to maturity will be less than the initial public offering price and, subject to the discussion regarding secondary market prices during the three months following the original issue date in “Supplemental Plan of Distribution” below, will be less than the initial estimated value of the securities set forth on the cover page. For more details, see “Risk Factors — Many factors affect the market value of the securities” on page PS-11 and “—The price, if any, at which you may be able to sell your securities prior to maturity may be less than the initial public offering price and our initial estimated value” on page PS-13.

What is the Fund?

According to publicly available information, the Energy Select Sector SPDR® Fund (the Fund) is an investment fund that seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Energy Select Sector Index (the Underlying Index). SSGA Funds Management, Inc. is the Fund’s investment adviser. The Underlying Index is designed to measure the performance of energy companies that are included in the S&P 500® Index.

You should be aware that an investment in the securities does not entitle you to any ownership interest in the Fund or in the common stocks of the companies held by the Fund or included in the Underlying Index. For a discussion of the Fund, see “Energy Select Sector SPDR® Fund” below.

How has the Fund performed historically?

You can find a graph setting forth the daily closing prices of the Fund for the period from January 1, 2014 to a recent date in the section entitled “Energy Select Sector SPDR® Fund— Historical Closing Prices per Share of the Fund” in this pricing supplement. We obtained the historical information from Bloomberg Financial Markets without independent verification. You should not take the past performance of the Fund as an indication of how the Fund will perform in the future.

What are the United States federal income tax consequences of investing in the securities?

The terms of the securities require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the securities for all tax purposes as pre-paid cash-settled derivative contracts in respect of the Fund. If the securities are so treated, subject to the potential application of the “constructive ownership” rules under Section 1260 of the Internal Revenue Code of 1986, as amended (the Code), a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the securities in an amount equal to the difference between the amount a holder receives at such time and the holder’s tax basis in the securities.

Please read carefully the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences” in this pricing supplement, the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

What are the Canadian federal income tax consequences of investing in the securities?

For a discussion of the Canadian federal income tax consequences of investing in the securities, please read carefully the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

Will the securities be listed on a stock exchange?

The securities will not be listed on any securities exchange. There can be no assurance that a liquid trading market will develop for the securities. Accordingly, if you sell your securities prior to maturity, you may have to sell them at a substantial loss. You should review the section entitled “Risk Factors—There may not be an active trading market for the securities” in this pricing supplement.

Are there any risks associated with my investment?

Yes, an investment in the securities is subject to significant risks, including the risk of loss of up to 85% of your principal. We urge you to read the detailed explanation of risks in “Risk Factors” beginning on page PS-10 herein and page S-1 of the accompanying prospectus supplement.

#### ADDITIONAL INFORMATION

You should read this pricing supplement together with the prospectus dated September 7, 2018, as supplemented by the prospectus supplement dated September 7, 2018, relating to our Senior Global Medium-Term Notes, Series H, of which these securities are a part. This pricing supplement, together with these documents, contains the terms of the securities and supersedes all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours.

You should rely only on the information provided or incorporated by reference in this pricing supplement, the prospectus and the prospectus supplement. We have not authorized anyone else to provide you with different information, and we take no responsibility for any other information that others may give you. We and Wells Fargo Securities, LLC are offering to sell the securities and seeking offers to buy the securities only in jurisdictions where it is lawful to do so. The information contained in this pricing supplement and the accompanying prospectus supplement and prospectus is current only as of their respective dates.

If the information in this pricing supplement differs from the information contained in the prospectus supplement or the prospectus, you should rely on the information in this pricing supplement.

You should carefully consider, among other things, the matters set forth in “Risk Factors” in this pricing supplement and the accompanying prospectus supplement, as the securities involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the securities.

You may access these documents on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if such address has changed, by reviewing our filings for the relevant date on the SEC website):

Prospectus dated September 7, 2018:

<https://www.sec.gov/Archives/edgar/data/1000275/000121465918005973/196181424b3.htm>

Prospectus Supplement dated September 7, 2018:

<https://www.sec.gov/Archives/edgar/data/1000275/000121465918005975/f97180424b3.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275.

Please see the section “Documents Incorporated by Reference” on page i of the above prospectus for a description of our filings with the SEC that are incorporated by reference therein.

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## RISK FACTORS

An investment in the securities is subject to the risks described below, as well as the risks described under “Risk Factors” in the accompanying prospectus supplement and prospectus. The securities have complex features and are a riskier investment than ordinary debt securities. Also, your securities are not equivalent to investing directly in the Fund or the common stocks held by the Fund. Investors in the securities are also exposed to further risks related to the Issuer of the securities, Royal Bank of Canada, which are described in Royal Bank of Canada’s most recent annual report on Form 40-F filed with the SEC and incorporated by reference herein. See the categories of risks identified and disclosed in the management’s discussion and analysis of financial condition and results of operations included in the annual report on Form 40-F. This section (and the management’s discussion and analysis section of the annual report on Form 40-F) describes the most significant risks relating to the securities. You should carefully consider whether the securities are suited to your particular circumstances.

Your investment may result in a loss of up to 85% of your principal

We will not repay you a fixed amount of principal on the securities at maturity. The payment at maturity on the securities will depend on the percentage change in the price of the Fund based on the Final Fund Price relative to the Initial Fund Price, and whether or not the Final Fund Price falls below the Buffer Price. Because the price of the Fund is subject to market fluctuations, the amount of cash you receive at maturity may be more or less than the principal amount of the securities. If the Final Fund Price is less than the Buffer Price, you will be exposed on a 1-to-1 basis to declines in the price of the Fund beyond the Buffer Price. Accordingly, if the price of the Fund decreases below the Buffer Price, you will lose up to 85% of your principal.

You will not receive interest payments on the securities

You will not receive any periodic interest payments on the securities or any interest payment at maturity. Your payment at maturity will depend on the percentage change in the price of the Fund based on the Final Fund Price relative to the Initial Fund Price, and whether or not the Final Fund Price is below the Buffer Price.

Your yield may be lower than the yield on a standard debt security of comparable maturity

The yield that you will receive on your securities, which could be negative, may be less than the return you could earn on other investments. Even if your yield is positive, your yield may be less than the yield you would earn if you bought a standard senior non-callable debt security of Royal Bank of Canada with the same maturity date. Your investment may not reflect the full opportunity cost to you when you take into account factors that affect the time value of money. Unlike conventional senior non-callable debt securities, the securities do not guarantee the return of all of the principal amount at maturity. In addition, no interest will be paid during the term of your securities.

Your return is limited and will not reflect the return of owning the Fund or the common stocks held by the Fund. You should understand that the opportunity to participate in the possible appreciation in the price of the Fund through an investment in the securities is limited because the amount that you receive at maturity will never exceed the maximum maturity payment amount. The maximum maturity payment amount represents a maximum appreciation on the securities of 48.00% over the principal amount of the securities. Although any positive return on the securities is based on 150% of any percentage increase of the Fund, in no event will the amount you receive at maturity be greater than the maximum maturity payment amount of \$1,480.00 per security.

Owning the securities is not the same as owning the shares of the Fund or the common stocks held by the Fund

The return on your securities will not reflect the return you would realize if you actually owned and held the shares of the Fund or the common stocks held by the Fund for a similar period. First, because the maturity payment amount will be determined based on the price of the Fund, the return on the securities will not take into account the value of any dividends that may be paid on the Fund or the common stocks held by the Fund. Second, as a holder of the securities, you will not be entitled to receive those dividends, nor will you have voting rights or any other rights that holders of the shares of the Fund or the common stocks held by the Fund may have. Even if the price of the Fund increases above the Initial Fund Price during the term of the securities, the market value of the securities may not increase by the same amount. It is also possible for the price of the Fund to increase while the market value of the securities declines.

There may not be an active trading market for the securities

The securities will not be listed on any securities exchange. There can be no assurance that a liquid trading market will develop for the securities. Even if a secondary market for the securities develops, it may not provide significant liquidity and transaction costs in any secondary market could be high. As a result, the difference between bid and asked prices for the securities in any secondary market could be substantial. If you sell your securities before maturity, you may have to do so at a discount from the initial public offering price, and, as a result, you may suffer substantial losses.

Wells Fargo Securities, LLC and its broker-dealer affiliates may make a market for the securities, although they are not required to do so. As market makers, trading of the securities may cause Wells Fargo Securities, LLC or its broker-dealer affiliates to have long or short positions in the securities. Because we do not expect that any other market makers will participate in a secondary market for the securities, the price at which you may be able to sell your securities is likely to depend on the price, if any, at which Wells Fargo Securities, LLC or its broker-dealer affiliates may be willing to buy your securities. See “Supplemental Plan of Distribution.”

The amount to be paid at maturity is not linked to the price of the Fund at any time other than the valuation date. The payment at maturity will be based on the price of the Fund only on the valuation date. Therefore, for example, if the fund closing price of the Fund decreased precipitously on the valuation date, the payment on the securities may be significantly less than it would otherwise have been had the payment been linked to the fund closing price of the Fund prior to that decrease. Although the actual price of the Fund on the maturity date or at other times during the term of the securities may be higher than the Fund price on the valuation date, you will not benefit from the fund closing price of the Fund at any time other than the valuation date.

Many factors affect the market value of the securities

The market value of the securities prior to maturity will be affected by factors that interrelate in complex ways. It is important for you to understand that the effect of one factor may offset any increase in the market value of the securities caused by another factor and that the effect of one factor may compound any decrease in the market value of the securities caused by another factor. For example, a change in the volatility of the Fund may offset some or all of any increase in the market value of the securities attributable to another factor, such as an increase in the price of the Fund. In addition, a change in interest rates may offset other factors that would otherwise change the price of the Fund, and therefore, may change the market value of the securities. We expect that the market value of the securities will depend to a significant extent on the amount, if any, by which the market price per share of the Fund during the term of the securities exceeds or does not exceed the Initial Fund Price. If you choose to sell your securities when the price of the Fund exceeds the Initial Fund Price, you may receive substantially less than the amount that would be payable at maturity based on this price because of the expectation that the Fund will continue to fluctuate until the valuation date. We believe that other factors that may also influence the value of the securities include:

- the volatility (frequency and magnitude of changes in the price) of the Fund and, in particular, market expectations regarding the volatility of the Fund;
- market interest rates in the U.S.;
- the dividend yields of the common stocks held by the Fund;
- our creditworthiness, as perceived in the market;
- changes that affect the Fund, such as additions, deletions or substitutions;
- the time remaining to maturity; and
- geopolitical, economic, financial, political, regulatory or judicial events as well as other conditions may affect the common stocks held by the Fund.

The correlation between the performance of the Fund and the performance of the Underlying Index may be imperfect

The Fund uses a representative sampling strategy to track the performance of its Underlying Index which may give rise to tracking error, i.e., the discrepancy between the performance of the Underlying Index and the performance of the Fund. In addition, because the shares of the Fund are traded on the NYSE Arca and are subject to market supply and investor demand, the market price of one share of the Fund may differ from the net asset value per share. Because of the potential discrepancies identified above, the returns on the Fund may not correlate perfectly with the returns on the Underlying Index over the same period. For more information, see “Energy Select Sector SPDR® Fund” below.

An investment in the securities is subject to risks associated with investing in stocks in the energy sector

The stocks included in the underlying index and that are generally tracked by the Fund are stocks of companies whose primary business is directly associated with the energy sector, including two sub-sectors: oil, gas and consumable fuels; and energy equipment and services. Because the value of the securities is linked to the performance of the Fund, an investment in the securities exposes investors to risks associated with investments in the securities of companies in the energy sector.

Energy companies develop and produce crude oil and natural gas and/or provide drilling and other energy resources production and distribution related services. Stock prices for these types of companies are mainly affected by the business, financial and operating conditions of the particular company, as well as changes in prices for oil, gas and other types of fuels, which in turn largely depend on supply and demand for various energy products and services. Some of the factors that may influence supply and demand for energy products and services include: general economic conditions and growth rates; weather conditions; the cost of exploring for, producing and delivering oil and gas; technological advances affecting energy efficiency and energy consumption; the ability of the Organization of Petroleum Exporting Countries (OPEC) to establish and maintain production levels of oil; currency fluctuations; inflation; natural disasters; civil unrest, acts of sabotage or terrorism; and other regional or global events. The profitability of energy companies may also be adversely affected by existing and future laws, regulations, government actions and other legal requirements relating to protection of the environment, health and safety matters and others that may increase the costs of conducting their business or may reduce or delay available business opportunities. Increased supply or weak demand for energy products and services, as well as various developments leading to higher costs of doing business or missed business opportunities, would adversely impact the performance of companies in the energy sector. The value of the securities may be subject to greater volatility and be more adversely affected by a single economic, political or regulatory occurrence affecting the energy sector or one of the sub-sectors of the energy sector than a different investment linked to a more broadly diversified group of issuers.

All of these factors could have an adverse effect on the price of the Fund and, therefore, on the value of the securities. In addition, the Fund is classified as “non-diversified.” A non-diversified fund generally may invest a larger percentage of its assets in the securities of a smaller number of companies. As of September 30, 2018, three companies accounted for more than 44% of the holdings of the Fund. As a result, the Fund may be more susceptible to the risks associated with these particular companies, or to a single economic, political or regulatory occurrence affecting these companies. The securities will be debt obligations of Royal Bank of Canada. No other company or entity will be responsible for payments under the securities

The securities will be issued by Royal Bank of Canada. The securities will not be guaranteed by any other company or entity. No other entity or company will be responsible for payments under the securities or liable to holders of the securities in the event Royal Bank of Canada defaults under the securities. Royal Bank of Canada’s credit ratings are an assessment of our ability to pay our obligations, including those on the securities. Consequently, if we default on our obligations, you could lose your entire investment, and actual or anticipated declines in our creditworthiness may affect the value of the securities. The securities will not be issued by or guaranteed by Wells Fargo Securities, LLC or any of its affiliates.

The policies of the Fund investment adviser and changes that affect the Underlying Index could affect the amount payable on the securities and their market value

The policies of the Fund’s investment adviser concerning the management of the Fund, additions, deletions or substitutions of the securities held by the Fund, and the manner in which changes affecting the Underlying Index are reflected in the Fund could affect the market price of shares of the Fund and, therefore, the amount payable on the securities on the maturity date and the market value of the securities before that date. The amount payable on the securities and their market value could also be affected if the Fund investment adviser changes these policies, for example, by changing the manner in

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which it manages the Fund, or if the Fund investment adviser discontinues or suspends maintenance of the Fund, in which case it may become difficult to determine the market value of the securities.

We have no affiliation with the Index Sponsor and will not be responsible for any actions taken by the Index Sponsor. We have no affiliation with the Index Sponsor and the Index Sponsor will not be involved in the offering of the securities. Consequently, we have no control of the actions of the Index Sponsor, including any actions of the type that would affect the composition of the Underlying Index, and therefore, the price of the Fund. The Index Sponsor has no obligation of any sort with respect to the securities. Thus, the Index Sponsor has no obligation to take your interests into consideration for any reason, including in taking any actions that might affect the value of the securities. Historical prices of the Fund should not be taken as an indication of the future prices of the Fund during the term of the securities.

The trading prices of the common stocks held by the Fund will determine the Fund price at any given time. As a result, it is impossible to predict whether the price of the Fund will rise or fall. Trading prices of the common stocks held by the Fund will be influenced by complex and interrelated political, economic, financial and other factors that can affect the issuers of those stocks held by the Fund.

Hedging transactions may affect the return on the securities.

As described below under "Use of Proceeds and Hedging," we, through one or more hedging counterparties, may hedge our obligations under the securities by purchasing shares of the Fund, common stocks held by the Fund, futures or options on the Fund or common stocks held by the Fund, or exchange-traded funds or other derivative instruments with returns linked or related to changes in the trading prices of common stocks held by the Fund or the price of the Fund, and may adjust these hedges by, among other things, purchasing or selling shares of the Fund, common stocks held by the Fund, futures, options, or exchange-traded funds or other derivative instruments with returns linked to the Fund or the common stocks held by the Fund at any time. Although they are not expected to, any of these hedging activities may adversely affect the trading prices of common stocks held by the Fund and/or the price of the Fund and, therefore, the market value of the securities. It is possible that we or one or more of our hedging counterparties could receive substantial returns from these hedging activities while the market value of the securities declines.

Our initial estimated value of the securities is less than the initial public offering price.

Our initial estimated value of the securities is less than the initial public offering price of the securities. This is due to, among other things, the fact that the initial public offering price of the securities reflects the borrowing rate we pay to issue securities of this kind (an internal funding rate that is lower than the rate at which we borrow funds by issuing conventional fixed rate debt), and the inclusion in the initial public offering price of the underwriting discount and commission and hedging and other costs associated with the securities.

The price, if any, at which you may be able to sell your securities prior to maturity may be less than the initial public offering price and our initial estimated value.

Assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your securities prior to maturity will be less than the initial public offering price and, subject to the discussion in the next paragraph, will be less than our initial estimated value. This is because any such sale price would not be expected to include the underwriting discount and commission or hedging or other costs associated with the securities, including the estimated profit our hedging counterparty(ies) expect to realize in consideration for assuming the risks inherent in hedging our obligations under the securities. In addition, any price at which you may sell the securities is likely to reflect customary bid-ask spreads for similar trades, and the cost of unwinding any related hedge transactions. In addition, the value of the securities determined for any secondary market price is expected to be based in part on the yield that is reflected in the interest rate on our conventional debt securities of similar maturity that are traded in the secondary market, rather than the internal funding rate that we used to price the securities and determine the initial estimated value. As a result, the secondary market price of the securities will be less than if the internal funding rate was used. These factors, together with various credit, market and economic factors over the term of the securities, and, potentially, changes in the price of the Fund, are expected to reduce the price at which you may be able to sell the securities in any secondary market and will affect the value of the securities in complex and unpredictable ways. Moreover, we expect that any secondary market price will be based on Wells Fargo Securities, LLC's valuation of the securities, which may differ from (and may be lower than) the valuation that

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we would determine for the securities at that time based on the methodology by which we determined the initial estimated value set forth on the cover page of this document.

As set forth below in the section “Supplemental Plan of Distribution,” for a limited period of time after the original issue date, Wells Fargo Securities, LLC may purchase the securities at a price that is greater than the price that would otherwise be determined at that time as described in the preceding paragraph. However, over the course of that period, assuming no changes in any other relevant factors, the price you may receive if you sell your securities is expected to decline.

The securities are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your securities to maturity.

The initial estimated value of the securities is an estimate only, calculated as of the time the terms of the securities were set

Our initial estimated value of the securities is based on the value of our obligation to make the payments on the securities, together with the mid-market value of the derivative embedded in the terms of the securities. See “Supplemental Plan of Distribution—Structuring the Securities” below. Our estimate is based on a variety of assumptions, including our internal funding rate (which represents a discount from our credit spreads), expectations as to dividends on the securities held by the Fund, interest rates and volatility, and the expected term of the securities. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities, including Wells Fargo Securities, LLC in connection with determining any secondary market price for the securities, may value the securities or similar securities at a price that is significantly different than we do.

The value of the securities at any time after the pricing date will vary based on many factors, including changes in market conditions, and cannot be predicted with accuracy. As a result, the actual value you would receive if you sold the securities in any secondary market, if any, should be expected to differ materially from our initial estimated value of your securities.

Potential conflicts of interest could arise

We, Wells Fargo Securities, LLC and our respective affiliates may engage in trading activities related to the Fund or the stocks held by the Fund that are not for the account of holders of the securities or on their behalf. These trading activities may present a conflict between the holders’ interest in the securities and the interests we, Wells Fargo Securities, LLC and our respective affiliates will have in the proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for our customers and in accounts under our management. These trading activities could be adverse to the interests of the holders of the securities.

We, Wells Fargo Securities, LLC and our respective affiliates may presently or from time to time engage in business with one or more of the issuers of the common stocks held by the Fund. This business may include extending loans to, or making equity investments in, such companies or providing advisory services to such companies, including merger and acquisition advisory services. In the course of business, we, Wells Fargo Securities, LLC and our respective affiliates may acquire non-public information relating to these companies and, in addition, one or more of our affiliates or the affiliates of the agent may publish research reports about these companies. Neither we nor the agent make any representation to any purchasers of the securities regarding any matters whatsoever relating to the issuers of the common stocks held by the Fund. Any prospective purchaser of the securities should undertake an independent investigation of these companies as in its judgment is appropriate to make an informed decision regarding an investment in the securities. The offering of the securities does not reflect any investment or sell recommendations as to the Fund or the securities that the Fund holds by us, Wells Fargo Securities, LLC or our respective affiliates.

Anti-dilution adjustments relating to the shares of the Fund do not address every event that could affect such shares. An adjustment factor, as described herein, will be used to determine the Final Fund Price. The adjustment factor will be adjusted by the calculation agent for certain events affecting the shares of the Fund. However, the calculation agent will not make an adjustment for every event that could affect such shares. If an event occurs that does not require the calculation agent to adjust the adjustment factor, the value of the securities may be adversely affected.

The calculation agent may postpone the valuation date and, therefore, determination of the Final Fund Price and the maturity date if a market disruption event occurs on the valuation date

The valuation date and, therefore, determination of the Final Fund Price may be postponed if the calculation agent determines that a market disruption event has occurred or is continuing on the valuation date with respect to the Fund. As a result, the maturity date for the securities would be postponed. You will not be entitled to compensation from us or the calculation agent for any loss suffered as a result of the occurrence of a market disruption event, any resulting delay in payment or any change in the price of the Fund after the valuation date. See “Specific Terms of the Securities — Valuation Date” and “—Market Disruption Events” below.

There are potential conflicts of interest between you and the calculation agent

The calculation agent will, among other things, determine the amount of your payment at maturity on the securities. Our wholly-owned subsidiary, RBC Capital Markets, LLC, will serve as the calculation agent. We may change the calculation agent after the original issue date without notice to you. The calculation agent will exercise its judgment when performing its functions. For example, the calculation agent may have to determine whether a market disruption event affects the Fund. Since this determination by the calculation agent will affect the payment at maturity on the securities, the calculation agent may have a conflict of interest if it needs to make a determination of this kind. In addition, the calculation agent determined the initial estimated value of the securities set forth on the cover page of this pricing supplement.

The tax treatment of the securities is uncertain and gain on the securities may be treated as ordinary income under the constructive ownership rules

The tax treatment of the securities is uncertain. We do not plan to request a ruling from the Internal Revenue Service or from the Canada Revenue Agency regarding the tax treatment of the securities, and the Internal Revenue Service, the Canada Revenue Agency or a court may not agree with the tax treatment described in this pricing supplement. Since the Fund is an exchange-traded fund, while the matter is not entirely clear, there exists a substantial risk that an investment in the securities is a “constructive ownership transaction” to which Section 1260 of the Code applies. If Section 1260 of the Code applies, all or a portion of any long-term capital gain recognized by a U.S. holder in respect of the securities could be recharacterized as ordinary income, in which case certain interest charges would apply. See the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences – Supplemental U.S. Tax Considerations – Potential Application of Section 1260 of the Code” below.

The Internal Revenue Service has issued a notice indicating that it and the U.S. Treasury Department are actively considering whether, among other issues, a holder should be required to accrue interest over the term of an instrument such as the securities even though that holder will not receive any payments with respect to the securities until maturity or earlier sale or exchange and whether all or part of the gain a holder may recognize upon sale, exchange or maturity of an instrument such as the securities should be treated as ordinary income. The outcome of this process is uncertain and could apply on a retroactive basis.

Please read carefully the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences” in this pricing supplement, the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

For a discussion of the Canadian federal income tax consequences of investing in the securities, please read the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

## SPECIFIC TERMS OF THE SECURITIES

The securities are to be issued pursuant to the terms of the Indenture dated as of October 23, 2003, between Royal Bank of Canada and The Bank of New York Mellon (as supplemented to date, the “Indenture”).

The information contained in this section and in the prospectus supplement and the prospectus summarizes some of the terms of the securities and the Indenture. This summary does not contain all of the information that may be important to you as a potential investor in the securities. You should read the Indenture before making your investment decision. We have filed copies of the Indenture with the SEC.

Issuer: Royal Bank of Canada

Specified  
Currency: U.S. dollars

Principal  
Amount: \$1,000 per security

Aggregate  
Principal  
Amount: \$2,375,000

Agent: Wells Fargo Securities, LLC  
The agent may make sales through its affiliates or selling agents.

Agent  
Acting in  
the Capacity  
of: Principal

Pricing  
Date: January 31, 2019

Original  
Issue Date: February 5, 2019

Maturity  
Date: August 5, 2022, subject to postponement as described below. The maturity date will be a business day. In the event the maturity date would otherwise be a date that is not a business day, the maturity date will be postponed to the next succeeding date that is a business day and no interest will accrue or be payable as a result of that postponement.

Valuation  
Date: July 29, 2022. If such day is not a trading day, the valuation date will be postponed to the next succeeding trading day. If a market disruption event (as defined under “—Market Disruption Events” below) occurs or is continuing on the valuation date, then the valuation date will be postponed to the first succeeding trading day on which a market disruption event has not occurred and is not continuing; however, if such first succeeding trading day has not occurred as of the eighth trading day after the originally scheduled valuation date, that eighth trading day shall be deemed to be the valuation date. If the valuation date has been postponed eight trading days after the originally scheduled valuation date and a market disruption event occurs or is continuing on such eighth trading day, the calculation agent will determine the closing price of the Fund on such eighth trading day based on its good faith estimate of the value of the shares (or other applicable securities) of the Fund as of the close of trading on such eighth trading day.

If the valuation date is postponed, then the maturity date of the securities will be postponed by an equal number of business days.

The Fund: The return on the securities is linked to the performance of the Energy Select Sector SPDR® Fund (the Fund).

Payment at  
Maturity: At maturity, for each security you own, you will receive a cash payment equal to the maturity payment amount. The maturity payment amount to which you will be entitled depends on the change in the price of the Fund based on the Final Fund Price relative to the Initial Fund Price, and whether or not the Final Fund Price is below the Buffer Price.

The maturity payment amount for each security will be determined by the calculation agent as described below:

· If the Final Fund Price is greater than the Initial Fund Price, the maturity payment amount per security will equal the lesser of:

(a)  $\$1,000 + (\$1,000 \times \frac{\text{Final Fund Price} - \text{Initial Fund Price}}{\text{Initial Fund Price}} \times \text{Participation Rate})$ ; and

(b) the maximum maturity payment amount

· If the Final Fund Price is less than or equal to the Initial Fund Price but greater than or equal to the Buffer Price, the maturity payment amount per security will equal \$1,000.

· If the Final Fund Price is less than the Buffer Price, the maturity payment amount per security will equal:

$\$1,000 - (\$1,000 \times \frac{\text{Buffer Price} - \text{Final Fund Price}}{\text{Initial Fund Price}})$

In such a case, you will lose up to 85% of your principal.

If the Final Fund Price is less than the Buffer Price, you will lose up to 85% of your principal. If the Final Fund Price is zero, the maturity payment amount will be \$150.00 per security.

If any payment is due on the securities on a day which is not a business day, then that payment may be made on the next day that is a business day, in the same amount and with the same effect as if paid on the original due date. No interest will be payable as a result of that postponement.

Maximum Maturity Payment Amount: \$1,480.00

Participation Rate: 150%

Initial Fund Price: \$63.78, which was the fund closing price of the Fund on the pricing date.

Final Fund Price: The fund closing price of the Fund on the valuation date, as determined by the calculation agent.

Buffer Price: \$54.213, which is 85% of the Initial Fund Price.

Closing Price: The “closing price” for one share of the Fund (or one unit of any other security for which a closing price must be determined) on any trading day means the official closing price on such day published by the principal United States securities exchange registered under the Securities Exchange Act of 1934, as amended, on which the Fund (or any such other security) is listed or admitted to trading.

Fund Closing Price: The “fund closing price” on any trading day means the product of (i) the closing price of one share of the Fund (or one unit of any other security for which a fund closing price must be determined) on such trading day and (ii) the adjustment factor applicable to the Fund on such trading day.

Adjustment Factor: The “adjustment factor” means, with respect to a share of the Fund (or one unit of any other security for which a fund closing price must be determined), 1.0, subject to adjustment in the event of certain events affecting the shares of the Fund. See “—Anti-dilution Adjustments Relating to the Fund” below.

A “market disruption event”, means any of the following events as determined by the calculation agent in its sole discretion:

Market  
Disruption  
Events:

- the occurrence or existence of a material suspension of or limitation imposed on trading by the relevant stock exchange (as defined below) or otherwise relating to the shares (or other applicable securities) of the Fund or any successor fund on the relevant stock exchange at any time during the one-hour period that ends at the close of trading on such day, whether by reason of movements in price exceeding limits permitted by such relevant stock exchange or otherwise;
- the occurrence or existence of a material suspension of or limitation imposed on trading by any related futures or options exchange (as defined below) or otherwise in futures or options contracts relating to the shares (or other applicable securities) of the Fund or any successor fund on any related futures or options exchange at any time during the one-hour period that ends at the close of trading on that day, whether by reason of movements in price exceeding limits permitted by the related futures or options exchange or otherwise;
- the occurrence or existence of any event, other than an early closure, that materially disrupts or impairs the ability of market participants in general to effect transactions in, or obtain market values for, shares (or other applicable securities) of the Fund or any successor fund on the relevant stock exchange at any time during the one-hour period that ends at the close of trading on that day;
- the occurrence or existence of any event, other than an early closure, that materially disrupts or impairs the ability of market participants in general to effect transactions in, or obtain market values for, futures or options contracts relating to shares (or other applicable securities) of the Fund or any successor fund on any related futures or options exchange at any time during the one-hour period that ends at the close of trading on that day;
- the closure of the relevant stock exchange or any related futures or options exchange with respect to the Fund or any successor fund prior to its scheduled closing time unless the earlier closing time is announced by the relevant stock exchange or related futures or options exchange, as applicable, at least one hour prior to the earlier of (1) the actual closing time for the regular trading session on such relevant stock exchange or related futures or options exchange, as applicable, and (2) the submission deadline for orders to be entered into the relevant stock exchange or related futures or options exchange, as applicable, system for execution at the close of trading on that day; or
- the relevant stock exchange or any related futures or options exchange with respect to the Fund or any successor fund fails to open for trading during its regular trading session.

For purposes of determining whether a market disruption event has occurred:

- (1) “close of trading” means the scheduled closing time of the relevant stock exchange with respect to the Fund or any successor fund; and
- (2) the “scheduled closing time” of the relevant stock exchange or any related futures or options exchange on any trading day for the Fund or any successor fund means the scheduled weekday closing time of such relevant stock exchange or related futures or options exchange on such trading day, without regard to after hours or any other trading outside the

regular trading session hours.

The calculation agent will adjust the adjustment factor as specified below if any of the events specified below occurs with respect to the Fund and the effective date or ex-dividend date, as applicable, for such event is after the pricing date and on or prior to the valuation date.

The adjustments specified below do not cover all events that could affect the Fund, and there may be other events that could affect the Fund for which the calculation agent will not make any such adjustments, including, without limitation, an ordinary cash dividend. Nevertheless, the calculation agent may, in its sole discretion, make additional adjustments to any terms of the securities upon the occurrence of other events that affect or could potentially affect the market price of, or shareholder rights in, the Fund, with a view to offsetting, to the extent practical, any such change, and preserving the relative investment risks of the securities. In addition, the calculation agent may, in its sole discretion, make adjustments or a series of adjustments that differ from those described herein if it determines that such adjustments do not properly reflect the economic consequences of the events specified in this pricing supplement or would not preserve the relative investment risks of the securities. All determinations made by the calculation agent in making any adjustments to the terms of the securities, including adjustments that are in addition to, or that differ from, those described in this pricing supplement, will be made in good faith and a commercially reasonable manner, with the aim of ensuring an equitable result. In determining whether to make any adjustment to the terms of the securities, the calculation agent may consider any adjustment made by the Options Clearing Corporation or any other equity derivatives clearing organization on options contracts on the Fund. For any event described below, the calculation agent will not be required to adjust the adjustment factor unless the adjustment would result in a change to the adjustment factor then in effect of at least 0.10%. The adjustment factor resulting from any adjustment will be rounded up or down, as appropriate, to the nearest one-hundred thousandth.

Anti-Dilution  
Adjustments  
Relating  
to the Fund:

(A) Stock Splits and Reverse Stock Splits

If a stock split or reverse stock split has occurred, then once such split has become effective, the adjustment factor will be adjusted to equal the product of the prior adjustment factor and the number of securities which a holder of one share (or other applicable security) of the Fund before the effective date of such stock split or reverse stock split would have owned or been entitled to receive immediately following the applicable effective date.

(B) Stock Dividends

If a dividend or distribution of shares (or other applicable securities) to which the securities are linked has been made by the Fund ratably to all holders of record of such shares (or other applicable security), then the adjustment factor will be adjusted on the ex-dividend date to equal the prior adjustment factor plus the product of the prior adjustment factor and the number of shares (or other applicable security) of the Fund which a holder of one share (or other applicable security) of the Fund before the ex-dividend date would have owned, or been entitled to receive, immediately following that date; provided, however, that no adjustment will be made for a distribution for which the number of securities of the Fund paid or distributed is based on a fixed cash equivalent value. For example, if a one-for-one share dividend is made as to the Fund, the adjustment factor will be changed from 1 to 2.

(C) Extraordinary Dividends

If an extraordinary dividend (as defined below) has occurred, then the adjustment factor will be adjusted on the ex-dividend date to equal the product of the prior adjustment factor and a fraction, the numerator of which is the closing price per share (or other applicable security) of the Fund on the trading day preceding the ex-dividend date, and the denominator of which is the amount by which the closing price per share (or other applicable security) of the Fund on the trading day preceding the ex-dividend date exceeds the extraordinary dividend amount (as defined below).

For purposes of determining whether an extraordinary dividend has occurred:

(1) “extraordinary dividend” means any cash dividend or distribution (or portion thereof) that the calculation agent determines, in its sole discretion, is extraordinary or special; and

(2) “extraordinary dividend amount” with respect to an extraordinary dividend for the securities of the Fund will equal the amount per share (or other applicable security) of the Fund of the applicable cash dividend or distribution that is attributable to the extraordinary dividend, as determined by the calculation agent in its sole discretion.

A distribution on the securities of the Fund described below under the section entitled “—Reorganization Events” below that also constitutes an extraordinary dividend will only cause an adjustment pursuant to that “—Reorganization Events” section.

(D) Other Distributions

If the Fund declares or makes a distribution to all holders of the shares (or other applicable security) of the Fund of any non-cash assets, excluding dividends or distributions described under the section entitled “—Stock Dividends” above, then the calculation agent may, in its sole discretion, make such adjustment (if any) to the adjustment factor as it deems appropriate in the circumstances. If the calculation agent determines to make an adjustment pursuant to this paragraph, it will do so with a view to offsetting, to the extent practical, any change in the economic position of a holder of the securities that results solely from the applicable event.

(E) Reorganization Events

If the Fund, or any successor fund, is subject to a merger, combination, consolidation or statutory exchange of securities with another exchange traded fund, and the Fund is not the surviving entity (a “reorganization event”), then, on or after the date of such event, the calculation agent shall, in its sole discretion, make an adjustment to the adjustment factor or the method of determining the maturity payment amount or any other terms of the securities as the calculation agent determines appropriate to account for the economic effect on the securities of such event, and determine the effective date of that adjustment. If the calculation agent determines that no adjustment that it could make will produce a commercially reasonable result, then the calculation agent may deem such event a liquidation event (as defined below).

Liquidation  
Events:

If the Fund is de-listed, liquidated or otherwise terminated (a “liquidation event”), and a

successor or substitute exchange traded fund exists that the calculation agent determines, in its sole discretion, to be comparable to the Fund, then, upon the calculation agent's notification of that determination to the Trustee and to us, any subsequent fund closing price for the Fund will be determined by reference to the fund closing price of such successor or substitute exchange traded fund (such exchange traded fund being referred to herein as a "successor fund"), with such adjustments as the calculation agent determines are appropriate to account for the economic effect of such substitution on holders of the securities.

If the Fund undergoes a liquidation event prior to, and such liquidation event is continuing on, the date that any fund closing price of the Fund is to be determined and the calculation agent determines that no successor fund is available at such time, then the calculation agent will, in its discretion, calculate the fund closing price for the Fund on such date by a computation methodology that the calculation agent determines will as closely as reasonably possible replicate the Fund, provided that if the calculation agent determines in its discretion that it is not practicable to replicate the Fund (including but not limited to the instance in which the sponsor of the Underlying Index discontinues publication of the Underlying Index), then the calculation agent will calculate the fund closing price for the Fund in accordance with the formula last used to calculate such fund closing price before such liquidation event, but using only those securities that were held by the Fund immediately prior to such liquidation event without any rebalancing or substitution of such securities following such liquidation event.

If a successor fund is selected or the calculation agent calculates the fund closing price as a substitute for the Fund, such successor fund or fund closing price will be used as a substitute for the Fund for all purposes, including for purposes of determining whether a market disruption event exists.

Notwithstanding these alternative arrangements, a liquidation event with respect to the Fund may adversely affect the value of the securities.

If any event is both a reorganization event and a liquidation event, such event will be treated as a reorganization event for purposes of the securities unless the calculation agent makes the determination referenced in the last sentence of the section entitled "—Anti-Dilution Adjustments Relating to the Fund: Reorganization Events" above.

Alternate Calculation: If at any time the method of calculating the Fund or a successor fund, or the Underlying Index, is changed in a material respect, or if the Fund or a successor fund is in any other way modified so that the Fund does not, in the opinion of the calculation agent, fairly represent the price of the securities of the Fund or such successor fund had such changes or modifications not been made, then the calculation agent may, at the close of business in New York City on the date that any fund closing price is to be determined, make such calculations and adjustments as, in the good faith judgment of the calculation agent, may be necessary in order to arrive at a closing price of the Fund comparable to the Fund or such successor fund, as the case may be, as if such changes or modifications had not been made, and calculate the fund closing price and the maturity payment amount with reference to such adjusted closing price of the Fund or such successor fund, as applicable.

Calculation Agent: RBC Capital Markets, LLC will serve as the calculation agent. All determinations made by the calculation agent will be at the sole discretion of the calculation agent and, absent a determination of a manifest error, will be conclusive for all purposes and binding on the holders and beneficial owners of the securities.

Trustee: The Bank of New York Mellon

Business Day: For purposes of the securities, a business day means a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in The City of New York generally are authorized or obligated by law, regulation or executive order to

close.

A “trading day” means a day, as determined by the calculation agent, on which the relevant stock exchange and each related futures or options exchange with respect to the Fund or any successor thereto, if applicable, are scheduled to be open for trading for their respective regular trading sessions.

Trading Day: The “relevant stock exchange” means the primary exchange or quotation system on which shares (or other applicable securities) of the Fund are traded, as determined by the calculation agent.

The “related futures or options exchange” means each exchange or quotation system where trading has a material effect (as determined by the calculation agent) on the overall market for futures or options contracts relating to the Fund.

We will pay any amounts to be paid by us on the securities without deduction or withholding for, or on account of, any and all present or future income, stamp and other taxes, levies, imposts, duties, charges, fees, deductions or withholdings (taxes) now or hereafter imposed, levied, collected, withheld or assessed by or on behalf of Canada or any Canadian political subdivision or authority that has the power to tax, unless the deduction or withholding is required by law or by the interpretation or administration thereof by the relevant governmental authority. At any time a Canadian taxing jurisdiction requires us to deduct or withhold for or on account of taxes from any payment made under or in respect of the securities, we will pay such additional amounts (Additional Amounts) as may be necessary so that the net amounts received by each holder (including Additional Amounts), after such deduction or withholding, will not be less than the amount the holder would have received had no such deduction or withholding been required.

However, no Additional Amounts will be payable with respect to a payment made to a holder of a security or of a right to receive payments in respect thereto (a Payment Recipient), which we refer to as an Excluded Holder, in respect of any taxes imposed because the beneficial owner or Payment Recipient:

- Additional Amounts: (i) is someone with whom we do not deal at arm’s length (within the meaning of the Income Tax Act (Canada)) at the time of making such payment;
- (ii) is subject to such taxes by reason of its being connected presently or formerly with Canada or any province or territory thereof otherwise than by reason of the holder’s activity in connection with purchasing the securities, the holding of securities or the receipt of payments thereunder;
- (iii) is, or does not deal at arm’s length with a person who is, a specified shareholder (within the meaning of subsection 18(5) of the Income Tax Act (Canada)) of Royal Bank of Canada (generally a person will be a specified shareholder for this purpose if that person, either alone or together with persons with whom the person does not deal at arm’s length, owns 25% or more of (a) our voting shares, or (b) the fair market value of all of our issued and outstanding shares);
- (iv) presents such security for payment (where presentation is required) more than 30 days after the relevant date (except to the extent that the holder thereof would have been entitled to such Additional Amounts on presenting a security for payment on the last day of such 30 day period); for this purpose, the relevant date in relation to any payments on any security means:
- a. the due date for payment thereof, or

- b. if the full amount of the monies payable on such date has not been received by the Trustee on or prior to such due date, the date on which the full amount of such monies has been received and notice to that effect is given to holders of the securities in accordance with the Indenture;
- (v) could lawfully avoid (but has not so avoided) such withholding or deduction by complying, or requiring that any agent comply with, any statutory requirements necessary to establish qualification for an exemption from withholding or by making, or requiring that any agent make, a declaration of non-residence or other similar claim for exemption to any relevant tax authority; or
- (vi) is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal Revenue Code of 1986, as amended (Code) (or any successor provisions), any regulation, pronouncement, or agreement thereunder, official interpretations thereof, or any law implementing an intergovernmental approach thereto, whether currently in effect or as published and amended from time to time.

For the avoidance of doubt, we will not have any obligation to pay any holders Additional Amounts on any tax which is payable otherwise than by deduction or withholding from payments made under or in respect of the securities at maturity.

We will also make such withholding or deduction and remit the full amount deducted or withheld to the relevant authority in accordance with applicable law. We will furnish to the Trustee, within 30 days after the date the payment of any taxes is due pursuant to applicable law, certified copies of tax receipts evidencing that such payment has been made or other evidence of such payment satisfactory to the Trustee. We will indemnify and hold harmless each holder of the securities (other than an Excluded Holder) and upon written request reimburse each such holder for the amount of (x) any taxes so levied or imposed and paid by such holder as a result of payments made under or with respect to the securities, and (y) any taxes levied or imposed and paid by such holder with respect to any reimbursement under (x) above, but excluding any such taxes on such holder's net income or capital.

For additional information, see the section entitled "Tax Consequences—Canadian Taxation" in the accompanying prospectus.

Authorized Denominations:	\$1,000 and integral multiples of \$1,000 in excess thereof.
Form of Securities:	Book-entry
Listing:	The securities will not be listed on any securities exchange.
Failure to Pay Maturity Payments	In the event we fail to pay the maturity payment amount on the maturity date, any overdue payment in respect of the maturity payment amount of the securities on the maturity date will bear interest until the date upon which all sums due in respect of such securities are received by or on behalf of the relevant holder, at a rate per annum which is the rate for deposits in U.S. dollars for a period of six months which appears on the Reuters Page LIBOR01 (or any replacement page or pages for the purpose of displaying prime rates or base lending rates of major U.S. banks) as of 11:00 a.m. (London time) on the first business day following that failure to pay. That rate will be determined by the calculation agent. If interest is required to be calculated for a period of less than one year, it will be calculated on the basis of a 360-day year consisting of the actual number of days in the period.
Amount When Due:	

Events of Default and Acceleration:	If the maturity of the securities is accelerated upon an event of default under the Indenture, the amount payable upon acceleration will be determined by the calculation agent. The amount will be the maturity payment amount, calculated as if the date of declaration of acceleration were the valuation date.
Terms Incorporated in the Master Note:	All of the terms in “Specific Terms of the Securities.”

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## ENERGY SELECT SECTOR SPDR® FUND

We have derived the following information regarding the Fund from publicly available documents relating to the Fund. We have not independently verified the accuracy or completeness of the following information. We are not affiliated with the Fund and the Fund will have no obligations with respect to the securities. This pricing supplement relates only to the securities and does not relate to the shares of the Fund or any assets included in the applicable Underlying Index. Neither we nor Wells Fargo Securities, LLC participates in the preparation of the publicly available documents described below. Neither we nor Wells Fargo Securities, LLC has made any due diligence inquiry with respect to the Fund in connection with the offering of the securities. There can be no assurance that all events occurring prior to the date of this pricing supplement, including events that would affect the accuracy or completeness of the publicly available documents described below, that would affect the trading price of the shares of the Fund have been or will be publicly disclosed. Subsequent disclosure of any events or the disclosure of or failure to disclose material future events concerning the Fund could affect the value of the shares of the Fund on the valuation date and therefore could affect the payment at maturity.

Information concerning the Fund filed with the SEC can be obtained through the SEC's website at [www.sec.gov](http://www.sec.gov). None of this publicly available information is incorporated by reference into this pricing supplement.

The Fund seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the Energy Select Sector Index. The Energy Select Sector Index measures the performance of the energy sector of the U.S. equity market. The Fund is composed of companies whose primary line of business is directly associated with the energy sector. The Fund trades on the NYSE Arca under the ticker symbol "XLE."

### The Energy Select Sector Index

The Underlying Index is a modified market capitalization-based index. The index is intended to track the movements of companies that are components of the S&P 500® Index (the "SPX") and are involved in the development or production of energy products. The index includes companies from the oil, gas and consumable fuels industry, as well as the energy equipment and services industry.

The Underlying Index is one of the Select Sector Indices. The Select Sector Indices are sub-indices of the SPX. Each stock in the SPX is allocated to at least one Select Sector Index, and the combined companies of the Select Sector Indices represent all of the companies in the SPX. The industry indices are sub-categories within each Select Sector Index and represent a specific industry segment of the overall Select Sector Index.

Each Select Sector Index was developed and is maintained in accordance with the following criteria:

- Each of the component stocks in a Select Sector Index (the "Component Stocks") is a constituent company of the SPX. The ten Select Sector Indices together will include all of the companies represented in the SPX and each of the stocks in the SPX will be allocated to at least one of the Select Sector Indices.

- The Underlying Index's "Index Compilation Agent" assigns each constituent stock of the SPX to a Select Sector Index. The Index Compilation Agent assigns a company's stock to a particular Select Sector Index based on S&P Dow Jones Indices' sector classification methodology as set forth in its Global Industry Classification Standard.

- Each Select Sector Index is calculated by S&P Dow Jones Indices using a modified "market capitalization" methodology. This design ensures that each of the component stocks within a Select Sector Index is represented in a proportion consistent with its percentage with respect to the total market capitalization of that Select Sector Index. For reweighting purposes, each Select Sector Index is rebalanced quarterly after the close of business on the second to last calculation day of March, June, September and December using the following procedures: (1) The rebalancing reference date is two business days prior to the last calculation day of each quarter; (2) With prices reflected on the rebalancing reference date, and membership, shares outstanding, additional weight factor (capping factor) and investable weight factors (as described in the section "Computation of the SPX" below) as of the rebalancing effective date, each company is weighted using the modified market capitalization methodology. Modifications are made as defined below.

- (i) The indices are first evaluated to ensure none of the indices breach the maximum allowable limits defined in rules (ii) and (v) below. If any of the allowable limits are breached, the component stocks are reweighted based on their float-adjusted market capitalization weights.

- (ii) If any component stock has a weight greater than 24%, that component stock has its float-adjusted market capitalization weight capped at 23%. The 23% weight cap creates a 2% buffer to ensure that no component stock exceeds 25% as of the quarter-end diversification requirement date.
  - (iii) All excess weight is equally redistributed to all uncapped component stocks within the relevant Select Sector Index.
  - (iv) After this redistribution, if the float-adjusted market capitalization weight of any other component stock(s) then breaches 23%, the process is repeated iteratively until no component stock s breaches the 23% weight cap.
  - (v) The sum of the component stocks with weight greater than 4.8% cannot exceed 50% of the total index weight. These caps are set to allow for a buffer below the 5% limit.
  - (vi) If the rule in step (v) is breached, all the component stocks are ranked in descending order of their float-adjusted market capitalization weights and the first component stock that causes the 50% limit to be breached has its weight reduced to 4.6%.
  - (vii) This excess weight is equally redistributed to all component stocks with weights below 4.6%. This process is repeated iteratively until step (v) is satisfied.
  - (viii) Index share amounts are assigned to each component stock to arrive at the weights calculated above. Since index shares are assigned based on prices one business day prior to rebalancing, the actual weight of each component stock at the rebalancing differs somewhat from these weights due to market movements.
  - (ix) If necessary, the reweighting process may take place more than once prior to the close on the last business day of March, June, September or December to ensure conformity with all diversification requirements.
- Each Select Sector Index is calculated using the same methodology utilized by S&P Dow Jones Indices in calculating the SPX, using a base-weighted aggregate methodology. The daily calculation of each Select Sector Index is computed by dividing the total market value of the companies in the Select Sector Index by a number called the index divisor.
- The Index Compilation Agent at any time may determine that a Component Stock which has been assigned to one Select Sector Index has undergone such a transformation in the composition of its business, and should be removed from that Select Sector Index and assigned to a different Select Sector Index. In the event that the Index Compilation Agent notifies S&P Dow Jones Indices that a Component Stock's Select Sector Index assignment should be changed, S&P Dow Jones Indices will disseminate notice of the change following its standard procedure for announcing index changes and will implement the change in the affected Select Sector Indices on a date no less than one week after the initial dissemination of information on the sector change to the maximum extent practicable. It is not anticipated that Component Stocks will change sectors frequently.
- Component Stocks removed from and added to the SPX will be deleted from and added to the appropriate Select Sector Index on the same schedule used by S&P Dow Jones Indices for additions and deletions from the SPX insofar as practicable.

#### The S&P 500® Index

The S&P 500® Index is intended to provide an indication of the pattern of common stock price movement. The calculation of the level of the SPX is based on the relative value of the aggregate market value of the common stocks of 500 companies as of a particular time compared to the aggregate average market value of the common stocks of 500 similar companies during the base period of the years 1941 through 1943.

S&P calculates the SPX by reference to the prices of the constituent stocks of the SPX without taking account of the value of dividends paid on those stocks. As a result, the return on the notes will not reflect the return you would realize if you actually owned the SPX constituent stocks and received the dividends paid on those stocks.

#### Computation of the S&P 500® Index

Historically, the market value of any component stock of the S&P 500® Index was calculated as the product of the market price per share and the number of then outstanding shares of such component stock. In March 2005, S&P began shifting the S&P 500® Index halfway from a market capitalization weighted formula to a float-adjusted formula, before

moving the S&P 500® Index to full float adjustment on September 16, 2005. S&P's criteria for selecting stocks for the S&P 500® Index did not change with the shift to float adjustment. However, the adjustment affects each company's weight in the S&P 500® Index.

Under float adjustment, the share counts used in calculating the S&P 500® Index reflect only those shares that are available to investors, not all of a company's outstanding shares. Float adjustment excludes shares that are closely held by control groups, other publicly traded companies or government agencies.

In September 2012, all shareholdings representing more than 5% of a stock's outstanding shares, other than holdings by "block owners," were removed from the float for purposes of calculating the S&P 500 Index. Generally, these "control holders" will include officers and directors, private equity, venture capital and special equity firms, other publicly traded companies that hold shares for control, strategic partners, holders of restricted shares, ESOPs, employee and family trusts, foundations associated with the company, holders of unlisted share classes of stock, government entities at all levels (other than government retirement/pension funds) and any individual person who controls a 5% or greater stake in a company as reported in regulatory filings. However, holdings by block owners, such as depositary banks, pension funds, mutual funds and ETF providers, 401(k) plans of the company, government retirement/pension funds, investment funds of insurance companies, asset managers and investment funds, independent foundations and savings and investment plans, will ordinarily be considered part of the float. Treasury stock, stock options, equity participation units, warrants, preferred stock, convertible stock, and rights are not part of the float. Shares held in a trust to allow investors in countries outside the country of domicile, such as depositary shares and Canadian exchangeable shares are normally part of the float unless those shares form a control block.

For each stock, an investable weight factor ("IWF") is calculated by dividing the available float shares by the total shares outstanding. Available float shares are defined as the total shares outstanding less shares held by control holders. This calculation is subject to a 5% minimum threshold for control blocks. For example, if a company's officers and directors hold 3% of the company's shares, and no other control group holds 5% of the company's shares, S&P would assign that company an IWF of 1.00, as no control group meets the 5% threshold. However, if a company's officers and directors hold 3% of the company's shares and another control group holds 20% of the company's shares, S&P would assign an IWF of 0.77, reflecting the fact that 23% of the company's outstanding shares are considered to be held for control. As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the S&P 500® Index. Constituents of the S&P 500® Index prior to July 31, 2017 with multiple share class lines will be grandfathered in and continue to be included in the S&P 500® Index. If a constituent company of the S&P 500® Index reorganizes into a multiple share class line structure, that company will remain in the S&P 500® Index at the discretion of the S&P Index Committee in order to minimize turnover.

The S&P 500® Index is calculated using a base-weighted aggregate methodology. The level of the S&P 500® Index reflects the total market value of all 500 component stocks relative to the base period of the years 1941 through 1943. An indexed number is used to represent the results of this calculation in order to make the level easier to use and track over time. The actual total market value of the component stocks during the base period of the years 1941 through 1943 has been set to an indexed level of 10. This is often indicated by the notation 1941-43 = 10. In practice, the daily calculation of the S&P 500® Index is computed by dividing the total market value of the component stocks by the "index divisor." By itself, the index divisor is an arbitrary number. However, in the context of the calculation of the S&P 500® Index, it serves as a link to the original base period level of the S&P 500® Index. The index divisor keeps the S&P 500® Index comparable over time and is the manipulation point for all adjustments to the S&P 500® Index, which is index maintenance.

#### Index Maintenance

Index maintenance includes monitoring and completing the adjustments for company additions and deletions, share changes, stock splits, stock dividends, and stock price adjustments due to company restructuring or spinoffs. Some corporate actions, such as stock splits and stock dividends, require changes in the common shares outstanding and the stock prices of the companies in the S&P 500® Index, and do not require index divisor adjustments.

To prevent the level of the S&P 500® Index from changing due to corporate actions, corporate actions which affect the total market value of the S&P 500® Index require an index divisor adjustment. By adjusting the index divisor for the change in market value, the level of the S&P 500® Index remains constant and does not reflect the corporate actions of individual companies in the S&P 500® Index. Index divisor adjustments are made after the close of trading and after

the calculation of the S&P 500<sup>®</sup> Index closing level.

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Changes in a company's total shares outstanding of 5% or more due to public offerings are made as soon as reasonably possible. Other changes of 5% or more (for example, due to tender offers, Dutch auctions, voluntary exchange offers, company stock repurchases, private placements, acquisitions of private companies or non-index companies that do not trade on a major exchange, redemptions, exercise of options, warrants, conversion of preferred stock, notes, debt, equity participations, at-the-market stock offerings or other recapitalizations) are made weekly, and are generally announced on Fridays for implementation after the close of trading the following Friday (one week later). If a 5% or more share change causes a company's IWF to change by five percentage points or more, the IWF is updated at the same time as the share change. IWF changes resulting from partial tender offers are considered on a case-by-case basis.

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Historical Closing Prices per Share of the Fund

Since its inception, the price of the Fund has experienced significant fluctuations. Any historical upward or downward trend in the closing price of the Fund during any period shown below is not an indication that the closing price of the Fund is more or less likely to increase or decrease at any time during the term of the securities. The historical prices of the Fund do not give an indication of future performance of the Fund. We cannot make any assurance that the future performance of the Fund or the trading prices of the common stocks held by the Fund will result in holders of the securities receiving a positive total return on their investment.

We obtained the closing prices of the Fund listed below from Bloomberg Financial Markets without independent verification. The actual closing prices of the Fund at or near maturity of the securities may bear little relation to the historical prices shown below.

The following graph sets forth the daily closing prices of the Fund for the period from January 1, 2014 to January 31, 2019. This historical data on the Fund is not indicative of the future price per share of the Fund or what the market value of the securities may be. Any historical upward or downward trend in the price per share of the Fund during any period set forth below is not any indication that the price per share of the Fund is more or less likely to increase or decrease at any time during the term of the securities.

## CANADIAN FEDERAL INCOME TAX CONSEQUENCES

An investor should read carefully the description of material Canadian federal income tax considerations relevant to a Non-resident Holder owning debt securities under “Tax Consequences—Canadian Taxation” in the accompanying prospectus.

## SUPPLEMENTAL DISCUSSION OF U.S. FEDERAL INCOME TAX CONSEQUENCES

The following, together with the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement, is a general description of the material U.S. tax considerations relating to the securities. It does not purport to be a complete analysis of all tax considerations relating to the securities. Prospective purchasers of the securities should consult their tax advisors as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of the U.S. of acquiring, holding and disposing of the securities and receiving payments under the securities. This summary is based upon the law as in effect on the date of this pricing supplement and is subject to any change in law that may take effect after such date.

### Supplemental U.S. Tax Considerations

The following section supplements the discussion of U.S. federal income taxation in the accompanying prospectus under “Tax Consequences – United States Taxation” and prospectus supplement under “Certain Income Tax Consequences – United States Taxation” with respect to U.S. holders (as defined in the accompanying prospectus). It applies only to those initial holders who are not excluded from the discussion of U.S. federal income taxation in the accompanying prospectus. You should consult with your own tax advisor concerning the consequences of investing in and holding the securities.

**NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE SECURITIES SHOULD BE TREATED FOR U.S. FEDERAL INCOME TAX PURPOSES. AS A RESULT, THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF AN INVESTMENT IN THE SECURITIES ARE UNCERTAIN. BECAUSE OF THE UNCERTAINTY, YOU SHOULD CONSULT YOUR TAX ADVISOR IN DETERMINING THE U.S. FEDERAL INCOME TAX AND OTHER TAX CONSEQUENCES OF YOUR INVESTMENT IN THE SECURITIES, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.**

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat the securities as pre-paid cash-settled derivative contracts in respect of the Fund for U.S. federal income tax purposes, and the terms of the securities require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the securities for all tax purposes in accordance with such characterization. If the securities are so treated, subject to the discussion below concerning the potential application of the “constructive ownership” rules under Section 1260 of the Code, a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the securities in an amount equal to the difference between the amount a holder receives at such time and the holder’s tax basis in the securities. In general, a U.S. holder’s tax basis in the securities will be equal to the price the holder paid for the securities. Capital gain recognized by an individual U.S. holder is generally taxed at preferential rates where the property is held for more than one year and is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations.

**Potential Application of Section 1260 of the Code.** Since shares of the Fund are the type of financial asset described under Section 1260 of the Code (including, among others, any equity interest in pass-thru entities such as regulated investment companies (including certain exchange-traded funds), real estate investment trusts, partnerships and passive foreign investment companies), while the matter is not entirely clear, there exists a substantial risk that an investment in the securities is a “constructive ownership transaction” to which Section 1260 of the Code applies. If Section 1260 of the Code applies, all or a portion of any long-term capital gain recognized by a U.S. holder in respect of the securities could be recharacterized as ordinary income (the Excess Gain). In addition, an interest charge will also apply to any deemed underpayment of tax in respect of any Excess Gain to the extent such gain would have resulted in gross income inclusions for the U.S. holder in taxable years prior to the taxable year of the sale, exchange or maturity (assuming such income accrued at a constant rate equal to the applicable federal rate as of the date of sale, exchange or maturity).

If an investment in the securities is treated as a constructive ownership transaction, it is not clear to what extent any long-term capital gain of a U.S. holder in respect of the securities will be recharacterized as ordinary income. It is possible, for example, that the amount of the Excess Gain (if any) that would be recharacterized as ordinary income in respect of the securities will equal the excess of (i) any long-term capital gain recognized by the U.S. holder in respect of the securities, over (ii) the “net underlying long-term capital gain” (as defined in Section 1260 of the Code) such U.S. holder would have had if such U.S. holder had acquired shares of the Fund at fair market value on the original issue date of the securities for an amount equal to the issue price of the securities and sold such shares of the Fund upon the date of sale, exchange or maturity of the securities at fair market value (appropriately taking into account the leveraged upside exposure). To the extent any gain is treated as long-term capital gain after application of the recharacterization rules of Section 1260 of the Code, such gain would be subject to U.S. federal income tax at the rates that would have been applicable to the net underlying long-term capital gain. U.S. holders should consult their tax advisors regarding the potential application of Section 1260 of the Code to an investment in the securities.

**Alternative Treatments.** Alternative tax treatments of the securities are also possible and the Internal Revenue Service might assert that a treatment other than that described above is more appropriate. For example, it would also be possible to treat the securities, and the Internal Revenue Service might assert that the securities should be treated, as a single debt instrument. Pursuant to such characterization, since the securities have a term that exceeds one year, such a debt instrument would be subject to the special tax rules governing contingent payment debt instruments. If the securities are so treated, a holder would generally be required to accrue interest currently over the term of the securities even though that holder will not receive any payments from us prior to maturity. In addition, any gain a holder might recognize upon the sale, exchange or maturity of the securities would be ordinary income and any loss recognized by a holder at such time would be ordinary loss to the extent of interest included in income in the current or previous taxable years in respect of the securities, and thereafter, would be capital loss.

Because of the absence of authority regarding the appropriate tax characterization of the securities, it is also possible that the Internal Revenue Service could seek to characterize the securities in a manner that results in tax consequences that are different from those described above. For example, the Internal Revenue Service could possibly assert that any gain or loss that a holder may recognize upon the sale, exchange or maturity of the securities should be treated as ordinary gain or loss.

The Internal Revenue Service has released a notice that may affect the taxation of holders of the securities. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of an instrument such as the securities should be required to accrue ordinary income on a current basis. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the securities will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The Internal Revenue Service and the U.S. Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the constructive ownership rules of Section 1260 of the Code, as discussed above, might be applied to such instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the securities for U.S. federal income tax purposes in accordance with the treatment described in this document unless and until such time as the U.S. Treasury Department and Internal Revenue Service determine that some other treatment is more appropriate.

**Backup Withholding and Information Reporting.** Please see the discussion under “Tax Consequences — United States Taxation — Information Reporting and Backup Withholding” in the accompanying prospectus for a description of the applicability of the backup withholding and information reporting rules to payments made on the securities.

**Non-U.S. Holders.** The following discussion applies to non-U.S. holders of the securities. A non-U.S. holder is a beneficial owner of a security that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

Except as described below, a non-U.S. holder will generally not be subject to U.S. federal income or withholding tax for amounts paid in respect of the securities, provided that (i) the holder complies with any applicable certification requirements, (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the U.S. for 183 days or more during the taxable year of the sale, exchange or maturity of the securities. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the

holder were a U.S. holder and, in the

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case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a trade or business in the U.S., subject to certain adjustments. Payments made to a non-U.S. holder may be subject to information reporting and to backup withholding unless the holder complies with applicable certification and identification requirements as to its foreign status.

Under Section 871(m) of the Code, a “dividend equivalent” payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments (“ELIs”) that are “specified ELIs” may be treated as dividend equivalents if such specified ELIs reference an interest in an “underlying security,” which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, the IRS has issued guidance that states that the U.S. Treasury Department and the IRS intend to amend the effective dates of the U.S. Treasury Department regulations to provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2021. Based on our determination that the securities are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the securities. However, it is possible that the securities could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Fund or the securities, and following such occurrence the securities could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the Fund or the securities should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the securities and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

As discussed above, alternative characterizations of the securities for U.S. federal income tax purposes are possible. Should an alternative characterization, by reason of change or clarification of the law, by regulation or otherwise, cause payments on the securities to become subject to withholding tax, we will withhold tax at the applicable statutory rate. The Internal Revenue Service has also indicated that it is considering whether income in respect of instruments such as the securities should be subject to withholding tax. We will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

**Foreign Account Tax Compliance Act.** The Foreign Account Tax Compliance Act (“FATCA”) will impose a 30% U.S. withholding tax on certain U.S.–source payments, including interest (and original issue discount), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S.–source interest or dividends (Withholdable Payments), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with the U.S. Treasury Department to collect and provide to the U.S. Treasury Department certain information regarding U.S. financial account holders, including certain account holders that are foreign entities with U.S. owners, with such institution or otherwise complies with FATCA. In addition, the securities may constitute a “financial account” for these purposes and thus, be subject to information reporting requirements pursuant to FATCA. FATCA also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

The U.S. Treasury Department and the Internal Revenue Service have announced that withholding on payments of gross proceeds from a sale or redemption of the securities will only apply to payments made after December 31, 2018. However, recently proposed regulations eliminate the requirement of withholding on gross proceeds from the sale or disposition of financial instruments. The U.S. Treasury Department has indicated that taxpayers may rely on these proposed regulations pending their finalization. If we determine withholding is appropriate with respect to the securities, we will withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Prospective investors are urged to consult with their own tax advisors regarding the possible implications of FATCA

on their investment in the securities.

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#### USE OF PROCEEDS AND HEDGING

The net proceeds from the sale of the securities will be used as described under “Use of Proceeds” in the accompanying prospectus supplement and prospectus and to hedge market risks of Royal Bank of Canada associated with its obligation to pay the maturity payment amount at maturity of the securities.

The initial public offering price of the securities includes the underwriting discount and commission, as well as hedging and other costs associated with the securities. Our hedging costs include the projected profit that our hedge counterparty expects to realize in consideration for assuming the risks inherent in hedging our obligations under the securities. We have hedged our obligations under the securities through an affiliate of Wells Fargo Securities, LLC and/or one or more of our affiliates, and we may in the future adjust our hedge. Because hedging our obligations entails risk and may be influenced by market forces beyond our or our counterparties’ control, this hedging may result in a profit that is more or less than expected, or could result in a loss.

We have no obligation to engage in any manner of hedging activity and will do so solely at our discretion and for our own account. No holder of the securities will have any rights or interest in our hedging activity or any positions we or any counterparty may take in connection with our hedging activity.

The hedging activity discussed above and other trading activities that we, Wells Fargo Securities, LLC and our respective affiliates may engage in may adversely affect the price of the Fund, the market value of the securities from time to time and the maturity payment amount you will receive on the securities at maturity. See “Risk Factors — Hedging transactions may affect the return on the securities” and “— Potential conflicts of interest could arise” for a discussion of these adverse effects.

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#### SUPPLEMENTAL PLAN OF DISTRIBUTION

The securities are being purchased by Wells Fargo Securities, LLC (the agent) as principal, pursuant to a distribution agreement between the agent and us. The agent has agreed to pay certain of our out-of-pocket expenses of the issue of the securities.

From time to time, the agent and its affiliates have engaged, and in the future may engage, in transactions with and performance of services for us for which they have been, and may be, paid customary fees. In particular, an affiliate of the agent will be our swap counterparty for a hedge relating to our obligations under the securities.

In the future, the agent and its affiliates may purchase and resell the offered securities in market-making transactions, with resales being made at prices related to prevailing market prices at the time of resale or otherwise. Wells Fargo Securities, LLC may act as principal or agent in such transactions.

The agent has committed to purchase all of these securities in the initial public offering of the securities if any are purchased.

The agent has offered the securities in part directly to the public at the public offering price set forth on the cover page of this pricing supplement and in part to WFA and Wells Fargo Advisors Financial Network, LLC or certain securities dealers at such price less a selling concession of \$20.00 per security. In addition to the selling concession allowed to WFA, the agent will pay \$0.75 per security of the underwriting discount and commission to WFA as a distribution expense fee for each security sold by WFA.

After the initial public offering of the securities is completed, the public offering price and concessions may be changed by the agent.

Proceeds to be received by Royal Bank of Canada in this offering will be net of the underwriting discount, commission and expenses payable by Royal Bank of Canada.

The securities are new issues of securities with no established trading markets. We have been advised by the agent that the agent intends to make a market in the securities. However the agent is not obligated to do so and may discontinue market making at any time without notice. No assurance can be given as to the liquidity of the trading market for the securities.

Any price that the agent makes available from time to time after the original issue date at which it would be willing to purchase the securities will generally reflect the agent's estimate of their value, less a customary bid-ask spread for similar trades and the cost of unwinding any related hedge transactions. That estimated value will be based upon a variety of factors, including then prevailing market conditions and our creditworthiness. However, for a period of three months after the original issue date, the price at which the agent may purchase the securities is expected to be higher than the price that would be determined based on the agent's valuation at that time less the bid-ask spread and hedging unwind costs referenced above. This is because, at the beginning of this period, that price will not include certain costs that were included in the initial public offering price, particularly a portion of the underwriting discount and commission (not including the selling concession) and the expected profits of our hedging counterparty(ies). As the period continues, these costs are expected to be gradually included in the price that the agent would be willing to pay, and the difference between that price and the price that would be determined based on the agent's valuation of the securities less a bid-ask spread and hedging unwind costs will decrease over time until the end of this period. After this period, if the agent continues to make a market in the securities, the prices that it would pay for them are expected to reflect the agent's estimated value, less the bid-ask spread and hedging unwind costs referenced above. In addition, the value of the securities shown on your account statement will generally reflect the price that the agent would be willing to pay to purchase the securities at that time.

Our broker-dealer subsidiary, RBC Capital Markets, LLC (RBCCM), does not expect to make a market in the securities. If RBCCM determines that the agent is unable or unwilling to make a market in the securities at any time, RBCCM may, but is not obligated to, make a market in the securities at that time. If RBCCM makes a market in the securities at any time, its valuation of the securities may differ from the agent's valuation, and consequently the price at which it may be willing to purchase the securities may differ from (and be lower than) the price at which the agent would have purchased the securities at that time.

Royal Bank of Canada has agreed to indemnify the agent against certain liabilities, including liabilities under the Securities Act of 1933.

No action has been or will be taken by Royal Bank of Canada, the agent or any broker-dealer affiliates of either Royal Bank of Canada or the agent that would permit a public offering of the securities or possession or distribution of this pricing supplement or the accompanying prospectus and prospectus supplement in any jurisdiction, other than the United States, where action for that purpose is required. No offers, sales or deliveries of the securities, or distribution of this pricing supplement or the accompanying prospectus supplement and prospectus, may be made in or from any jurisdiction except in circumstances which will result in compliance with any applicable laws and regulations and will not impose any obligations on Royal Bank of Canada, the agent or any broker-dealer affiliates of either Royal Bank of Canada or the agent.

#### Selling Restrictions

##### Argentina

Royal Bank of Canada U.S. Medium-Term Notes program and the related offer of securities and the sale of securities under the terms and conditions provided herein does not constitute a public offering in Argentina. Consequently, no public offering approval has been requested or granted by the Comisión Nacional de Valores, nor has any listing authorization of the securities been requested on any stock market in Argentina.

##### Brazil

The securities may not be offered or sold to the public in Brazil. Accordingly, this pricing supplement and the accompanying prospectus supplement and prospectus have not been submitted to the Comissão de Valores Mobiliários for approval. Documents relating to this offering may not be supplied to the public as a public offering in Brazil or be used in connection with any offer for subscription or sale to the public in Brazil.

##### Chile

The securities have not been registered with the Superintendencia de Valores y Seguros in Chile and may not be offered or sold publicly in Chile. No offer, sales or deliveries of the securities, or distribution of this pricing supplement or the accompanying prospectus supplement and prospectus, may be made in or from Chile except in circumstances that will result in compliance with any applicable Chilean laws and regulations.

##### China

This pricing supplement and the accompanying prospectus supplement and prospectus have not been filed with or approved by the People's Republic of China (for such purposes, not including Hong Kong and Macau Special Administrative Regions or Taiwan) authorities, and is not an offer of securities (whether public offering or private placement) within the meaning of the Securities Law or other pertinent laws and regulations of the People's Republic of China. These documents shall not be delivered to any party who is not an intended recipient or offered to the general public if used within the People's Republic of China, and the securities so offered cannot be sold to anyone that is not a qualified purchaser of the People's Republic of China. Each dealer has represented, warranted and agreed that the notes are not being offered or sold and may not be offered or sold, directly or indirectly, in the People's Republic of China, except under circumstances that will result in compliance with applicable laws and regulations.

##### European Union

No Prospectus (as defined in Directive 2003/71/EC (as amended, the "Prospectus Directive")) will be prepared in connection with these securities. Accordingly, these securities may not be offered to the public in any member state of the European Economic Area (the "EEA"), and any purchaser of these securities who subsequently sells any of these securities in any EEA member state must do so only in accordance with the requirements of the Prospectus Directive, as implemented in that member state.

The securities are not intended to be offered, sold or otherwise made available to, and should not be offered, sold or otherwise made available to, any retail investor in the EEA. For these purposes, the expression "offer" includes the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, and a "retail investor" means a person who is one (or more) of: (a) a retail client, as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II"); or (b) a customer, within the meaning of Insurance Distribution Directive 2016/97/EU, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (c) not a qualified

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investor as defined in the Prospectus Directive. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the “PRIIPs Regulation”) for offering or selling the securities or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the securities or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

Mexico

The securities have not been registered with the National Registry of Securities maintained by the Mexican National Banking and Securities Commission and may not be offered or sold publicly in Mexico. This pricing supplement and the accompanying prospectus supplement and prospectus may not be publicly distributed in Mexico.

Paraguay

This is a private and personal offering. The securities offered have not been approved by or registered with the National Securities Commission (Comisión Nacional de Valores) and are not part of a public offering as defined by the Paraguayan Securities Law. The information contained herein is for informational and marketing purposes only and should not be taken as an investment advice.

Peru

The securities have not been and will not be registered with the Capital Markets Public Registry of the Capital Markets Superintendence (SMV) nor the Lima Stock Exchange Registry (RBVL) for their public offering in Peru under the Peruvian Capital Markets Law (Law N°861/ Supreme Decree N°093-2002) and the decrees and regulations thereunder.

Consequently, the securities may not be offered or sold, directly or indirectly, nor may this pricing supplement, the accompanying supplements or any other offering material relating to the securities be distributed or caused to be distributed in Peru to the general public. The securities may only be offered in a private offering without using mass marketing, which is defined as a marketing strategy utilizing mass distribution and mass media to offer, negotiate or distribute securities to the whole market. Mass media includes newspapers, magazines, radio, television, mail, meetings, social networks, Internet servers located in Peru, and other media or technology platforms.

Uruguay

The sale of the securities qualifies as a private placement pursuant to section 2 of Uruguayan law 18,627. The securities must not be offered or sold to the public in Uruguay, except in circumstances which do not constitute a public offering or distribution under Uruguayan laws and regulations. The securities are not and will not be registered with the Financial Services Superintendency of the Central Bank of Uruguay.

Taiwan

The securities may be made available outside Taiwan for purchase by Taiwan residents outside Taiwan but may not be offered or sold in Taiwan.

## STRUCTURING THE SECURITIES

The securities are our debt securities. As is the case for all of our debt securities, including our structured notes, the economic terms of the securities reflect our actual or perceived creditworthiness. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these securities at a rate that is more favorable to us than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. This relatively lower implied borrowing rate, which is reflected in the economic terms of the securities, along with the underwriting discount and commission and hedging and other costs associated with the securities, typically reduces the initial estimated value of the securities at the time their terms are set.

In order to satisfy our payment obligations under the securities, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) with an affiliate of the agent and/or one of our subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, and the tenor of the securities. The economic terms of the securities and their initial estimated value depend in part on the terms of these hedging arrangements. Our cost of hedging will include the projected profit that such counterparties expect to realize in consideration for assuming the risks inherent in hedging our obligations under the securities. Because hedging our obligations entails risks and may be influenced by market forces beyond the counterparties' control, such hedging may result in a profit that is more or less than expected, or could result in a loss. See "Use of Proceeds and Hedging" above.

The lower implied borrowing rate, the underwriting discount and commission and hedging and other costs associated with the securities reduced the economic terms of the securities to you and resulted in the initial estimated value for the securities on the pricing date being less than their initial public offering price. See "Risk Factors—Our initial estimated value of the securities is less than the initial public offering price" above.

## VALIDITY OF THE SECURITIES

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the securities has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the securities have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the securities will be validly issued and, to the extent validity of the securities is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, and will be valid obligations of the Bank, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the securities or the Indenture which may be limited by applicable law; to insolvency and other laws of general application affecting creditors' rights, to limitations under applicable limitations statutes, and to limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated September 7, 2018, which has been filed as Exhibit 5.1 to Royal Bank's Form 6-K filed with the SEC dated September 7, 2018.

In the opinion of Morrison & Foerster LLP, when the securities have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the securities will be valid, binding and enforceable obligations of Royal Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith). This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the legal opinion dated September 7, 2018, which has been filed as Exhibit 5.2 to the Bank's Form 6-K dated September 7, 2018.

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