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July 28, 2020

Ms. Marija Tresoglavic
Acting Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Tresoglavic:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Customer Crisis Fund (CCF) Pilot Program – Two-Year Evaluation Report**

BC Hydro writes to submit its CCF Pilot Program Two-Year Evaluation Report in compliance with Directive 6 of BCUC Order No. G-166-17. The Order directed BC Hydro to file an evaluation report of the CCF Pilot Program within 90 days of the completion of its second year. The second year of the CCF Pilot Program officially ended on April 30, 2020.

The purpose of the CCF Pilot Program was to assess whether a crisis fund available to all residential customers experiencing a temporary financial crisis can generate a utility benefit that sufficiently justifies itself on an economic or cost of service basis.

In its first-year assessment report BC Hydro indicated that it did not have enough information to make this assessment and required more data from a second year of the pilot to provide a full statistical analysis. Due to the COVID-19 pandemic, the economic analysis was assessed over a period of 22 months instead of 24 months, but this did not affect the economic evaluation as there was sufficient data to provide a full determination of any economic benefits. The overall operational performance of the CCF Pilot was evaluated over a 24-month period.

Accordingly, the Two-Year Evaluation Report provides a final summary of operational metrics to reflect two years of CCF operations and an evaluation of participant and non-participant benefits (over 22 months), and also includes information on an additional public opinion survey conducted during the second year.

In summary, from May 1, 2018 to April 30, 2020:

- BC Hydro received 20,136 grant applications and approved 6,385 grants totaling \$2,297,552.
- Eighty-five per cent of customers who used the CCF Pilot Program avoided disconnection during this period.
- The analyses of disconnection volumes, notification and collection costs, and bad debt expense did not identify statistically significant economic benefits notwithstanding the potential societal benefits of the CCF.
- Among 1,000 British Columbians polled, 88 per cent indicated it is appropriate for BC Hydro to continue offering a program such as CCF; and over 67 per cent of respondents indicated they supported of BC Hydro continuing to charge a small fee to continue CCF.

For further information, please contact Anthea Jubb at 604-623-3545 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Fred James
Chief Regulatory Officer

aj/ma

Enclosure

Copy to: BCUC Project No. 3698781 (2015 Rate Design Application) Registered Intervener Distribution List.

**Customer Crisis Fund Pilot Program
Two-Year Evaluation Report**

July 28, 2020

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1 **Executive Summary**

2 In compliance with BCUC Order No. G-211-18, BC Hydro submits to the British
3 Columbia Utilities Commission (**BCUC** or **Commission**) its evaluation report
4 (**Two-Year Evaluation or Two-Year Evaluation Report**) of the Customer Crisis
5 Fund (**CCF**) Pilot Program (**CCF Pilot or CCF Pilot Program**). This submission is
6 provided for information only in response to BCUC Order No. G-211-18.

7 Directive 6 of BCUC Order No. G-166-17 directs that BC Hydro file an evaluation
8 report following the second year of the CCF Pilot and that the CCF Pilot continue
9 until the earlier of three years from the start of the CCF Pilot unless otherwise
10 ordered by the BCUC. This submission does not apply for any amendments to Order
11 No. G-166-17, nor does it apply for any changes to the CCF Pilot or Rate
12 Schedule (**RS**) 1903 Customer Crisis Fund Rate Rider.

13 The purposes of the Two-Year Evaluation Report are to summarize CCF Pilot
14 operations during the first two years of the program, and to provide an evaluation of
15 participant and non-participant benefits that provides information for an examination
16 of whether a crisis fund “would not amount to a social assistance program if it
17 generates a utility benefit sufficiently justifiable on an economic or cost of service
18 basis.”¹

19 **CCF Pilot Performance**

20 From May 1, 2018 to April 30, 2020, BC Hydro received 20,136 grant applications
21 and approved 6,385 applications totaling \$2,297,552 in grants. Of customers
22 receiving grants, 85 per cent were facing disconnection for non-payment but had not
23 yet been disconnected at the time the grant application was submitted. The CCF
24 Pilot was successful in helping these customers avoid disconnection.

¹ [2015 RDA Decision, Order No. G-5-17](#), pdf page 104 of 148.

1 The application approval percentage improved significantly as processes and
2 program messaging were refined. In the second year, 55 per cent of applications
3 were approved (in comparison to 36 per cent for the first year). Of applications that
4 were rejected, the top three reasons for rejection were: (1) the customer's account is
5 not in arrears or is not facing disconnection, (2) the applicant is not experiencing a
6 temporary financial crisis, and (3) the applicant has not provided requested
7 information.

8 Approximately 18 per cent of approved applications were audited during the first
9 two years of the CCF Pilot. Approximately one-third of audits resulted in reversal of
10 the CCF grant, with the primary reason being that applicants didn't provide
11 documentation in response to the audit request.

12 Actual operating costs averaged \$498,909 per year during the first two years of the
13 CCF Pilot. Operating costs decreased from \$558,179 in year one to \$439,639 in
14 year two as operations were better understood and efficiencies were identified.

15 ***CCF Pilot Benefits***

16 The purpose of the CCF Pilot is to examine the economic benefits resulting from
17 reduced operating costs associated with notification and collection of overdue bills,
18 creation of payment arrangement and disconnection and reconnection service,
19 reduced interest costs because of more timely payments, and increased revenue by
20 avoiding losses in consumption (i.e., revenue loss from losing customer
21 consumption), and to determine whether the economic benefits are sufficient to
22 offset the program costs.

23 The evaluation compared test group to control group samples. The test group was
24 made up of monthly cohorts of applicant accounts that received grants (i.e.,
25 grantees); and the matched control groups were made up monthly cohorts of
26 comparable customer accounts who did not receive grants. While the operational
27 performance of the CCF Pilot was evaluated over a 24-month period, the economic

1 analysis was over a period of 22 months; with the test and control group samples
2 each consisting of about 2,800 accounts. These datasets were large enough to
3 reveal CCF Pilot economic benefits if they had existed.

4 The analyses of disconnection volumes, notification and collection costs, and bad
5 debt expense did not identify statistically significant economic benefits for those
6 aspects of BC Hydro's operations as a result of the CCF Pilot Program. An annual
7 benefit of approximately \$156 was identified from cost of borrowings from delayed
8 revenues.

9 Accordingly, the evaluation of the pilot program indicates there are insufficient utility
10 benefits to justify CCF on an economic or cost of service basis notwithstanding the
11 potential societal benefits of the CCF.

12 ***Public Opinion***

13 In May 2020, BC Hydro commissioned a short omnibus survey with respect to the
14 ongoing awareness of the CCF as well as the ongoing support for the CCF Rate
15 Rider.

16 In summary, among 1,000 British Columbians polled, 88 per cent indicated it is
17 appropriate for BC Hydro to continue offering a program such as the CCF to help
18 customers avoid disconnection of service when facing a temporary financial crisis. In
19 addition, over 67 per cent of respondents indicated their support of BC Hydro
20 continuing to charge a small fee to continue the CCF.

1 **Background**

2 **1.1 2015 Rate Design Application (2015 RDA)**

3 On September 24, 2015, BC Hydro filed its 2015 RDA for BCUC approval to update
4 its residential, general service and transmission service rates and the Electric Tariff
5 terms and conditions. As part of the regulatory process to review the 2015 RDA, an
6 intervener group made several proposals focusing on low-income residential
7 customers, such as a low-income rate and a crisis intervention program.

8 In its Decision accompanying Order No. G-5-17 (**2015 RDA Decision**),² the BCUC
9 determined that it did not have jurisdiction to set a low-income rate without an
10 economic or cost of service basis for such a rate. However, it was persuaded by the
11 intervener group’s argument that a crisis intervention program “would not amount to
12 a social assistance program if it generates a utility benefit sufficiently justifiable on
13 an economic or cost of service basis.”³ Given insufficient evidence in that
14 proceeding, the BCUC directed BC Hydro to establish a crisis intervention fund pilot
15 program:

16 “The establishment of a pilot Crisis Intervention Fund is
17 approved. BC Hydro is directed to prepare and file, within
18 six months of the date of this order, a proposed crisis assistance
19 pilot program for residential customers who have arrears with
20 BC Hydro and are unable to pay their electricity bills. BC Hydro
21 has indicated that it is prepared to work collaboratively with the
22 low-income advisory group in the development of its proposal,
23 and the Commission expects that it will do so.”⁴

² [2015 RDA Decision, Order No. G-5-17.pdf](#).

³ *Ibid*, pdf page 104 of 148.

⁴ *Ibid*, pdf page 122 of 148.

1.2 Customer Emergency Fund Pilot Program Established

On July 24, 2017, BC Hydro filed its Customer Emergency Fund Application (**CEF Application**), proposing the establishment of a two-year pilot program that would offer grants (in the form of credits on customer bills)⁵ to eligible customers. In the Application, BC Hydro sought BCUC approval of, among other things:

- a rate rider of 0.82 cents per day (equivalent to 25 cents per month on average), effective June 1, 2018, to be applicable to all Residential Service accounts (with two exceptions); and
- The Customer Emergency Fund Regulatory Account to address differences in forecast program participation, costs, and the timing of revenues, for the duration of the pilot program.

The 25 cents per month charge was based on a proposal by the intervener group during the 2015 RDA proceeding as BC Hydro did not have a solid base for forecasting customer participation.

By Order No. G-166-17, the BCUC approved a three-year (rather than proposed two-year) pilot program and accepted the proposed rate rider of 0.82 cents per day in RS 1903 (**CCF Rate Rider**) and the establishment of the Customer Emergency Fund Regulatory Account. Additionally, Directive 6 of BCUC Order No. G-166-17 states:

“BC Hydro is directed to file an evaluation report with the Commission within 90 days of the completion of the second year of the CEF Pilot. The CEF Pilot will continue until the earlier of three years from the CEF pilot implementation date, Commission approval of an application from BC Hydro to end

⁵ BC Hydro has used the term “grants” even though eligible customers will only receive credits on their bills equal to the amount of their arrears, up to the maximum amounts identified. In this report, BC Hydro used CCF application or grant application interchangeably, to refer to the applications received by BC Hydro seeking a grant from the CCF Pilot Program.

1 the pilot prior to the end of the three year CEF Pilot, or issuance
2 of a Commission order to end the CEF Pilot.”⁶

3 As recommended by the BCUC in its Order No. G-5-17, BC Hydro had worked
4 collaboratively with its Low Income Advisory Council (**LIAC**) in the development of
5 the pilot proposal, including eligibility criteria for customers to participate in the pilot.
6 BC Hydro appreciates the LIAC members’ assistance in launching the pilot.

7 Prior to the launch of the pilot, BC Hydro changed the name of the pilot program
8 from the Customer Emergency Fund (**CEF**) to the CCF to better reflect the purpose
9 of the program to assist residential customers facing a temporary financial crisis.

10 On May 1, 2018, BC Hydro started the CCF Pilot. On June 1, 2018, BC Hydro began
11 billing the CCF Rate Rider of 0.82 cents per day on applicable residential customers’
12 bills. Revenue collected from residential customers through the CCF Rate Rider is
13 used to provide grants to eligible CCF Pilot participants and to fund BC Hydro’s
14 incremental costs associated with the CCF Pilot.

15 **1.3 Earlier Evaluation Requested and Pilot Review Suspended**

16 Between June and October 2018, BC Hydro received 1,307 complaints regarding
17 the CCF Pilot and the CCF Rate Rider. The BCUC also “received a substantial
18 number of complaints and other correspondence from ratepayers” as indicated in
19 BCUC Order No. G-211-18.⁷ While recognizing that some of the customer concerns
20 about the CCF Pilot had been reviewed in the 2015 RDA, the BCUC believed that
21 “an earlier review of the CCF results would be beneficial as it allows for a timelier
22 evaluation of the program in light of ratepayer concerns”. BC Hydro was thus
23 directed “to file an evaluation report of the CCF Pilot Program within 90 days of the
24 completion of the first year of the CCF Pilot Program” (i.e., from May 1, 2018 to
25 April 30, 2019).

⁶ [BCUC Order No. G-166-17.](#)

⁷ [BCUC Order No. G-211-18.](#)

1 BC Hydro submitted the Customer Crisis Fund Pilot Program – Year One Evaluation
2 Report (**Year One Evaluation**) on July 31, 2019. Concurrently, BC Hydro also filed a
3 separate application for a reduction of the CCF Rate Rider from 0.82 cents per day
4 to 0.43 cents per day, as BC Hydro’s experience was that program participation and
5 costs were less than initially estimated. The BCUC approved BC Hydro’s application
6 for a reduction of the CCF Rate Rider on an interim basis under Order No. G-194-19
7 pending the outcome of the proceeding to review the Year One Evaluation.

8 Considering submissions received, including BC Hydro’s Year One Evaluation, the
9 BCUC, by Order No. G-5-20, suspended the proceeding to review the Year One
10 Evaluation because of “insufficient data to conduct a review of the CCF Pilot
11 Program.” The BCUC ordered “the filing of the evaluation report on or before
12 July 28, 2020 being within 90 days of the completion of the second year of the CCF
13 Pilot Program in compliance with Order G-166-17.” The BCUC also determined that
14 the review of the CCF Rate Rider change on a permanent basis would be after the
15 review of the Two-Year Evaluation Report.

16 **1.4 Pilot Objectives and Purpose of Evaluation**

17 The CCF Pilot, as indicated in the 2015 RDA Decision and reaffirmed in BCUC
18 Order No. G-5-20, is to test whether a crisis intervention program available to all
19 residential customers experiencing a temporary financial crisis can generate a utility
20 benefit that sufficiently justifies on an economic or cost of service basis so that the
21 program may proceed on a more permanent basis.⁸

⁸ [2015 RDA Decision, Order No. G-5-17](#), pdf page 105 of 148.

1 With this objective in mind, the Two-Year Evaluation Report assesses the following
2 questions based on BC Hydro's experience operating the CCF Pilot from
3 May 1, 2018 to April 30, 2020:

- 4 • Does providing grants to customers in a temporary financial crisis:
 - 5 ▶ Maintain their electrical service, and
 - 6 ▶ Improve their ongoing ability to pay their bills? and
- 7 • Are there operational cost savings (including revenue losses and bad debt
8 expenses) that offset program costs to justify the CCF program on an economic
9 or cost of service basis?

10 This Two-Year Evaluation Report also provides operational metrics based on
11 BC Hydro's experience in operating the CCF Pilot.

12 For clarity, the purpose of the Year Two Evaluation Report is not to make a
13 recommendation regarding the viability of an on-going customer crisis program.
14 Additionally, the Two-Year Evaluation Report provides the economic evaluation
15 based on two-year data of CCF operation, updates operational metrics to reflect
16 two years of CCF operations, and summarizes an additional customer survey
17 conducted during the second year. The Two-Year Evaluation Report does not
18 replicate or update BC Hydro's summary of the operating model, analysis of
19 BC Hydro customer opinions; analysis of CCF Grant Recipient's experience, opinion
20 and characteristics; or the operational assessment presented in the Year One
21 Evaluation. For this information please refer to the CCF Year One Evaluation
22 Report.⁹

⁹ BC Hydro CCF Year One Evaluation Report is provided at:
<https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/regulatory-planning-documents/regulatory-filings/reports/2019-07-31-bchydro-customer-crisis-fund-evaluation-report-year-1.pdf>.

1.5 Customer Crisis Fund Regulatory Account

The Customer Emergency Fund Regulatory Account, which was later changed its name to Customer Crisis Fund Regulatory Account (**CCF Regulatory Account**), was established pursuant to BCUC Order No. G-166-17. The net difference between the revenues collected under the Customer Crisis Fund Rate Rider and the incremental costs related to the CCF Pilot Program in each fiscal year is transferred to the CCF Regulatory Account. Any remaining balance in the CCF Regulatory Account at the end of the CCF Pilot would be returned to, or collected from, residential customers. The method to recover or refund any remaining balance in the CCF Regulatory Account will be addressed after completion of the CCF Pilot in April 2021.

On April 3, 2020, BC Hydro filed an application for its COVID-19 Customer Relief Program (**COVID Relief Fund**) as contemplated by the British Columbia Government's Direction to the British Columbia Utilities Commission Respecting COVID-19 Relief (Order in Council No. 159 issued on April 2, 2020) (**Order in Council No. 159** or **Direction**). The application included amendments to allow BC Hydro to defer to the CCF Regulatory Account: (i) credits provided to customers under the COVID Relief Fund for Residential Customers; (ii) BC Hydro's costs to administer the COVID Relief Fund; and (iii) interest costs; all as required by section 3(3)(a) of the Direction. Additionally, BC Hydro sought approval to allow BC Hydro to reduce the amounts in the CCF Regulatory Account by amounts collected by BC Hydro pursuant to the CCF Rate Rider set out in RS 1903 of BC Hydro's Electric Tariff, also as required by section 3(3)(b) of the Direction.

As shown in [Table 1](#), the balance of the CCF Regulatory Account at May 31, 2020 was \$22.55 million.¹⁰

¹⁰ Refer to BC Hydro COVID-19 Customer Relief Program Application Report No. 3 – May 2020.

1 **Table 1 CCF Regulatory Account Balance at**
 2 **May 31, 2020**

\$ million (Credit Amounts Appear in Parentheses)	
Net CCF Costs (CCF Rate Rider Revenues less CCF Pilot Program Costs)	(4.81)
COVID-19 Relief Measures	27.36
CCF Regulatory Account Balance as of May 31, 2020	22.55

3 **1.6 COVID-19 Pandemic**

4 With the onset of the COVID-19 pandemic, the Government of B.C. declared a State
 5 of Emergency on March 17, 2020. As a result, BC Hydro took action to assist
 6 customers through this pandemic by immediately announcing a suspension of all
 7 dunning¹¹ activities, including a halt to collection of late payment charges, issuance
 8 of final notice of disconnection (**FNOD**) letters, and the suspension of disconnection
 9 activities. BC Hydro also mentioned the Customer Crisis Fund as a potential means
 10 of relief for customers in its initial communications in response to the COVID-19
 11 pandemic, prior to the announcement of the COVID Relief Fund that was approved
 12 by BCUC Order No. G-79-20.

13 In addition, the operation of the CCF Pilot Program was temporarily changed,
 14 including:

- 15 • Customers could apply as soon as they had accounts in arrears without waiting
 16 for a notice of disconnection. This change was made primarily because dunning
 17 notices were not being sent as noted above and thus customers were unable to
 18 demonstrate they were facing disconnection. The change was also made in
 19 recognition that customers may have incurred additional costs related to the
 20 COVID-19 pandemic but are not eligible for the COVID Relief Fund.

¹¹ Dunning activity is the process by which BC Hydro collects accounts receivables. It is characterized with the issuance of 'Dunning' notices once a customer is considered overdue with a payment.

-
- 1 • Customers could receive a second CCF grant between April 1, 2020 and
2 December 31, 2020 (within the 12-month period of the previous grant) if the
3 initial grant had been for less than the maximum amounts. The second grant
4 would be the difference between the initial grant amount and the maximum
5 grant amounts (i.e., \$500 for non-electrically heated homes and \$600 for
6 electrically heated homes).

7 The impacts of the COVID-19 pandemic are reflected in the Two-Year Evaluation as
8 follows:

- 9 • The impacts of the COVID-19 pandemic are reflected in the analysis of the
10 operational summary of the CCF Pilot (section [2](#)) as this analysis covers the
11 24 months ending April 30, 2020. The COVID-19 pandemic greatly increased
12 the public awareness of the CCF Pilot, which is reflected in the increase of the
13 CCF grant applications received in March and April 2020.
- 14 • The impacts of the COVID-19 pandemic are not reflected in the analysis of
15 CCF Pilot benefits (section [3](#)). This is because, due the suspension of dunning
16 activity, data from March and April 2020 was not usable in the analysis. The
17 analysis used 22-month of data, all of which was prior to the pandemic's direct
18 effect on British Columbia. The 22-months of data were large enough to reveal
19 if CCF Pilot economic benefits existed.
- 20 • The impacts of the COVID-19 pandemic may have influenced the responses to
21 the public opinion survey (section [4](#)), as the survey was administered in
22 May 2020, however the influence of the impact of the pandemic on responses
23 is unknown.

1.7 Organization of Evaluation Report

The Two-Year Evaluation Report is set out as follows:

- Section [2](#) reports the CCF Pilot costs and operational metrics to April 30, 2020;
- Section [3](#) provides analysis of CCF Pilot benefits to February 29, 2020;
- Section [4](#) provides results of a public opinion poll; and
- Section [5](#) summarizes BC Hydro's conclusions from the CCF Pilot's second year in operation.

2 Operational Summary of the CCF Pilot

This section discusses operational metrics and actual operating costs for the CCF Pilot for the period May 1, 2018 to April 30, 2020. The data presented in this operational summary covers the first 24 months of the CCF Pilot operation and reflects the effects of the COVID-19 pandemic in March and April 2020.

There have been no material changes to the CCF Pilot delivery model from what was described in the Year One Evaluation Report.¹²

2.1 CCF Pilot Operations

This section describes operational metrics from the first and second years of the CCF Pilot, including:

- Submitted applications;
- Approved applications;
- Rejected applications; and
- Reconsideration of rejected applications.

¹² CCF Year One Evaluation Report at pages 10 to 14.

1 From May 1, 2018 to April 30, 2020, BC Hydro received 20,136 grant applications
 2 and approved 6,385 applications, totaling \$2,297,552 in grants. [Table 2](#) below
 3 summarizes the application processing detail for each year.

4 **Table 2 Summary of CCF Grant Application**
 5 **Processing¹³**

Applications	Year 1 (Reported)	Year 2	CCF Pilot Totals	Annualized Average
Total Number of Applications Received	6,416	13,719	20,136	10,068
Average # of Applications Per Day	18	38	28	28
Approved Applications	2,282	4,137	6,385	3,193
Rejected Applications	3,827	6,038	9,892	4,946
Grant Reversals after Audit	170	135	361	181
Total Rejected Applications	3,997	6,173	10,253	5,127
Applications Closed or In Progress as of April 30	137	3,409	3,498	1,748
Online	5,775	12,789	18,562	9,281
Paper	641	930	1,574	787
Applications Submitted With Help of 3 rd Party (includes Law Foundation Partners & Service BC)	283	267	550	275
Applications Submitted With Help of Other Assistance (includes Band Social Workers or friend/family)	534	741	1,275	638
Applications Submitted Without Help of 3 rd Party or Other Assistance	5,599	12,711	18,310	9,155
Total CCF Grants Awarded (\$)	847,518	1,450,034	2,297,552	1,148,776
Average Grant Amount (After Audit) (\$)	371	351	360	360

6 The following discussion provides further explanation on those items.

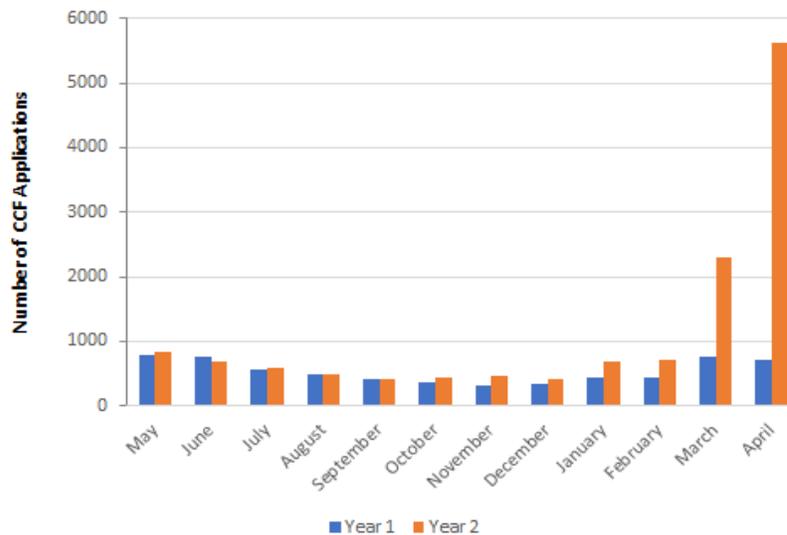
¹³ Throughout the Two-Year Evaluation Report, totals for Year 1 as reported in the Year One Evaluation Report, for the period May 1, 2018 to April 30, 2019. CCF Pilot Totals are reported as of April 30, 2020 and reflect changes after Year 1 reporting (e.g., as a result of audits conducted after April 30, 2019).

2.1.1 Received Applications

[Figure 1](#) below shows the number of applications received by month in the first two years of operation. On average, 555 applications were received each month during the first twenty-two months (to February 2020), or 18 applications per day. Year over year comparisons showed a slight increase in applications from year one to year two (to February 2020), from 535 to 579 applications per month.

The number of applications increased significantly in March and April 2020 with the onset of the COVID-19 pandemic. With the Government of B.C. declaring a State of Emergency on March 17, 2020, the CCF program saw a dramatic spike in applications of 2,300 (74 per day) in March 2020 and 5,700 (188 per day) in April 2020.

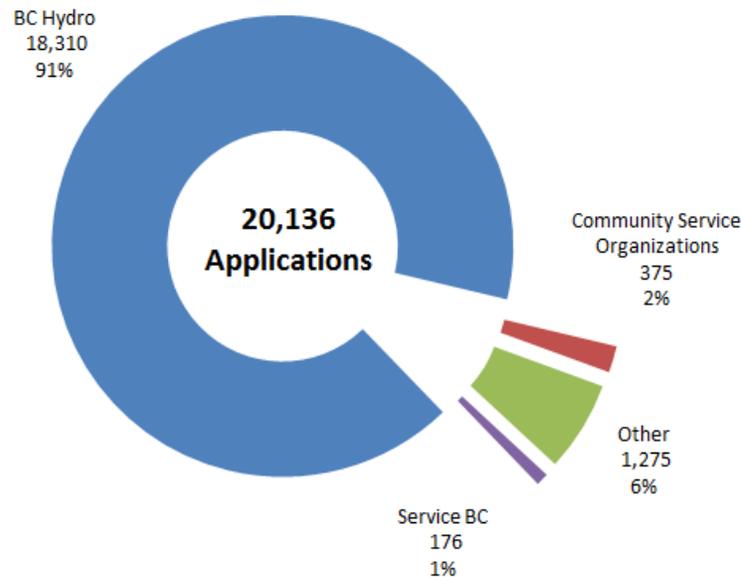
Figure 1 Applications Received by Month



As shown in [Figure 2](#) below, after two years of operation, approximately 91 per cent of the CCF applications were submitted directly to BC Hydro without any indication that the customer had obtained assistance from another organization or individual to fill out the application.

1

Figure 2 Applications by Source



2 Approximately 91 per cent of CCF applications were submitted through bchydro.com
3 using the online form. Of the remainder, most were submitted by mail directly to
4 BC Hydro. Of the total 20,136 applications received during the CCF Pilot, 176 or
5 1 per cent were submitted at Service BC offices and 375 or 2 per cent were
6 submitted with the assistance of a community service organization sponsored by the
7 Law Foundation of British Columbia. Further, 6 per cent or 1,275 applications
8 indicated that the application was submitted with the assistance from others, which
9 could be a friend, family member or social worker.

10 **2.1.2 Approved Applications**

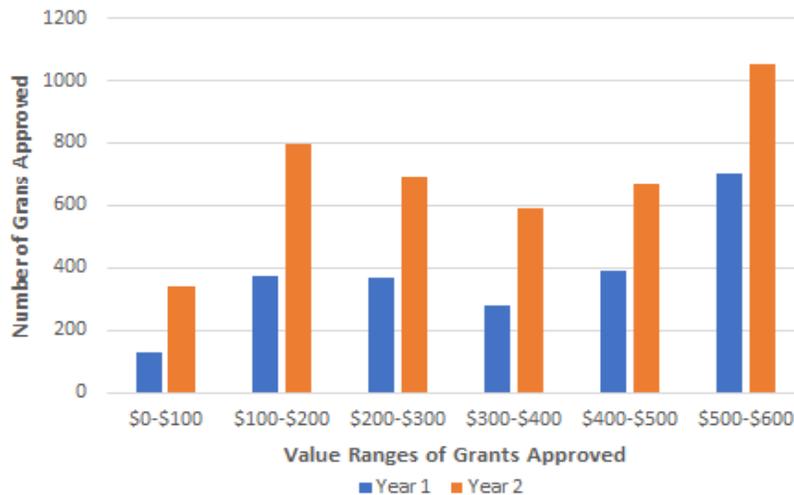
11 BC Hydro has approved 6,385 CCF applications and provided \$2.3 million in grants
12 (in the form of bill credits) to customers from May 1, 2018 to April 30, 2020. Overall,
13 this equates to an average of \$360 per grant recipient.

14 Customers are eligible to receive a maximum of one grant in a 12-month period.
15 Over the two-year period, 177 applicants or 3 per cent received the grant twice.
16 Although a customer may receive a second CCF grant between April 1, 2020 and

1 December 2020 if the COVID-19 pandemic results in a temporary financial crisis and
 2 if the initial grant was below the maximum amounts, the 177 applicants reported
 3 here all received the second grant before April 1, 2020.

4 In terms of grant amount, 72 per cent of grant recipients' arrears were fully covered
 5 with grants less than the maximum allowed (i.e., \$500 for non-electrically heated
 6 homes and \$600 for electrically heated homes). [Figure 3](#) shows the number of the
 7 grant applications approved by the grant amount during the first and second years of
 8 the CCF Pilot.

9 **Figure 3 Number of CCF Grants by Grant Size**



10 The CCF Pilot sets the maximum grant amount depending on the primary heating
 11 fuel source, i.e., \$600 for customers with electric heat and \$500 for customers with
 12 other than electric heat. [Table 3](#) below identifies the number of applicants receiving
 13 grants for the maximum amounts before the suspension of dunning activity in
 14 March 2020. Two sets of data are provided:

- 15 • Customers receiving grants who had overdue account balances equal to or
 16 greater than the maximum grant amount when the FNODs were issued; and

- Customers who received the maximum grant amount when the grant was approved.

The difference between these numbers reflects that some customers had additional amounts owing after they submitted their CCF grant application, in most cases because another bill became past due. BC Hydro took these additional balances into consideration and issued larger grants than was indicated by the FNOD balance.

As shown, a total of 5,028 CCF grants had been provided. The number of applicants receiving grants that had overdue account balances equal to or greater than the maximum grant amount when the FNOD was issued was 938 (766 for customers with electric heat and 172 for customers with other heat sources) or 19 per cent of the total grant recipients. The number of grant recipients receiving the maximum grant amount increased to 1,224 or 24 per cent of total grant recipients when grants were approved.

Table 3 FNOD Balances and Number of CCF Grants Issued for Maximum Amounts

	Total Grants	FNOD Balances at or above Maximum Grant Level		Maximum Grants Approved	
		Number	Percentage (%)	Number	Percentage (%)
Customers with Electric Heat (max \$600)	4,077	766	19	984	24
Customers with Other Than Electric Heat (max \$500)	951	172	18	240	25
Total	5,028	938	19	1,224	24

Furthermore, of the customers approved to receive CCF grants before the onset of the COVID-19 pandemic:

- 85 per cent had not yet been disconnected at the time the grant application was submitted; and

- 15 per cent had been disconnected prior to applying for the grant.

2.1.3 Rejected Applications

BC Hydro tracks the reasons of rejections. [Table 4](#) summarizes the reasons for BC Hydro rejecting the grant applications before the audit during the first two years of the CCF Pilot. The top three reasons for rejection were: (1) account is not in arrears or is not facing disconnection, (2) the applicant is not experiencing a temporary financial crisis, and (3) the applicant has not provided requested information.

Table 4 Rejected Applications by Reason

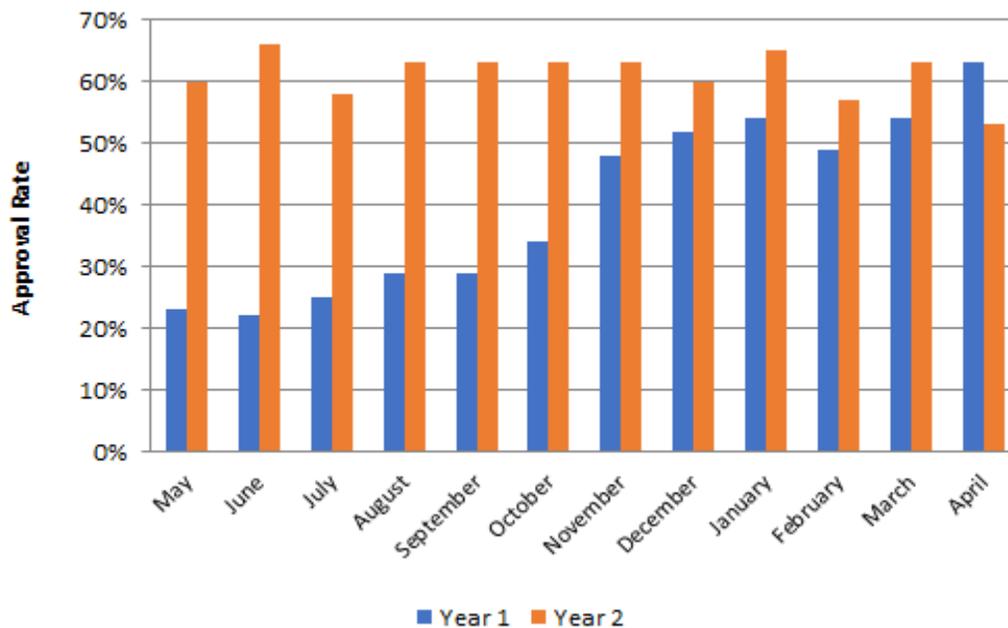
Reason	CCF Pilot	
	Number of Grants Rejected	Percentage of Grants Rejected (%)
Account is not in arrears or is not facing disconnection	4,056	41
Applicant is not experiencing a temporary financial crisis	2,174	22
Application has not provided requested information ¹⁴	1,480	15
Applicant has not demonstrated prior attempt to pay bills	398	4
Account has a balance exceeding \$1,000	102	1
Applicant is not account holder residing at address in arrears	195	2
Applicant has applied in past 12 months	50	<1
Other	1,437	15
Total	9,892	100

Throughout the CCF Pilot, BC Hydro worked with its Pilot partners (Service BC, Law Foundation of BC, Ministry of Social Development and Poverty Reduction) and stakeholders (including the LIAC) to improve the clarity of eligibility criteria and

¹⁴ Information may be requested from applicants during adjudication if the grant application form hasn't been filled out completely or if there are apparent gaps.

1 the application form to reduce the number of applications that was rejected due to
 2 possible confusion about the eligibility criteria and also to make completing
 3 the application form easier. This is reflected in [Figure 4](#), showing that each month's
 4 approval rate was higher than in the second year than in the first year, except for
 5 April 2020. The application approval rate averaged about 62 per cent between
 6 May 2019 and March 2020. The approval rate fell to 52 per cent in April 2020, as
 7 many customers applied after having experiencing job loss due to COVID-19
 8 pandemic, but were not eligible because they did not have balances in arrears.¹⁵

9 **Figure 4 Application Approval Rate by Month**



¹⁵ Customers that stopped working because of COVID-19 were directed to BC Hydro's COVID-19 Relief Fund for Residential Customers, in which they may have been eligible for a bill credit equal to three month's average consumption. Customers not eligible for the Relief Fund could re-apply to CCF.

1 **2.1.4 Reconsideration of Rejected Applications**

2 As explained in the CEF Application,¹⁶ a customer may file a reconsideration of
3 an application that has been rejected. The reconsideration is an independent review
4 process conducted by a second department of BC Hydro.

5 As shown in [Table 4](#) above, 15 per cent of rejections were due to the applicant not
6 responding to the BC Hydro's request for additional information and 41 per cent
7 were due to the customer not being in arrears or facing the possibility of
8 disconnection. When a customer called our contact centre about a rejection due to
9 one of those two reasons, BC Hydro through our representatives suggested to the
10 customer to re-submit a new application with the required information or when they
11 receive their next collections notice. As a result, most rejected applications did not
12 result in reconsideration. During the first two years, 67 grants were provided as a
13 result of reconsideration of a previous rejection, which equates to 1 per cent of all
14 grant approvals.

15 [Table 5](#) below shows the number of rejected applications that were re-submitted for
16 application for grant and were subsequently approved. For clarity, re-submission
17 after initial submission and rejection is not considered as a reconsideration. In total,
18 1,008 grants were approved that required more than one attempt at applying. These
19 results show that some customers took the feedback from the rejection email and
20 provided the information that may have been missing in their initial application.

¹⁶ [CEF Application](#), at page 26 to 27.

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Table 5 **Number of Grants Approved for Applicants who Resubmitted Applications to Address Deficiencies**

Application Attempts	Total Grant Approved
2	767
3	176
4	46
5	12
6	6
7	1
Grand Total	1,008

4 **2.1.5 Audits of Approved Applications**

5 In the CEF Application, BC Hydro identified that verifying all applicants' eligibility
 6 upon application would be resource intensive and could create a barrier to
 7 participation. Accordingly, BC Hydro accepts the grant applicant's declaration and
 8 conducts random audits to confirm that the grant recipient fully qualifies as per the
 9 CCF Pilot criteria and terms and conditions.¹⁷

10 BC Hydro's right to conduct audits is specified in the terms and conditions of the
 11 CCF Pilot, which are part of the application form for the CCF grant. When submitting
 12 an application for a CCF grant, the applicant for the grant acknowledges that
 13 BC Hydro may request and conduct an audit of the documents from the applicant to
 14 substantiate the information provided in the grant application, as well as that the
 15 applicant must cooperate with the audit.

16 In the majority of cases, grant recipients are randomly selected. However, in some
 17 cases, the CCF Team may identify an application for audit, for example, based on
 18 other information available in BC Hydro's SAP billing system. In the CEF Application,
 19 BC Hydro indicated it intended to audit approximately 10 per cent of successful
 20 CCF grant applications. It was determined after year one operations that the CCF

¹⁷ [CEF Application](#), page 11.

1 program would increase its target percentage of audit checks to approximately
 2 20 per cent of approved grant applications as a result of the audit failure rate being
 3 higher than anticipated.

4 As shown in [Table 6](#) below, BC Hydro conducted 1,124 audits during the first
 5 two years of operations, which was approximately 18 per cent of approved
 6 applications.¹⁸

7 **Table 6 CCF Pilot Audits**

	Year 1 (Reported)¹⁹	Year 2	Total/Average²⁰
Approved Applications	2,452	4,137	6,385
Customer Audits Conducted	522	500	1,124
Customer Audits in Progress	0	75	75
Percentage of Approved Applications Audited (%)	21	12	18
Successful Grants After Audits	352	290	688
Audit Success Percentage (%)	67	58	61
Rejected Grants After Audit	170	135	361
Audit Failure Percentage (%)	33	27	32

8 The main reason for audits to fail is that the grant recipient does not provide the
 9 requested supporting documentation. This occurred in 85 per cent of the
 10 failed audits. [Figure 5](#) below shows the reasons why approved applications are
 11 reversed after audit.

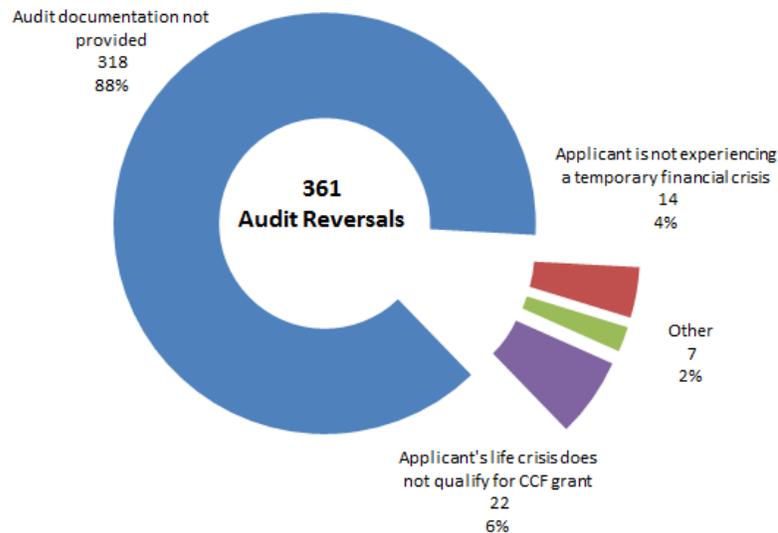
¹⁸ No audits were conducted in March or April 2020 as a result of the COVID-19 pandemic and the need to redirect CCF staff to support the operations of the COVID-19 relief fund.

¹⁹ Total applications approved as reported in the Year One Evaluation. Total number of Approved Applications and Customer Audits Conducted have been adjusted as of Year 2.

²⁰ Totals and averages based on statistics reported at the end of Year 2. Sum totals will not correspond with years 1 and 2 due to adjustments made after year 1 reporting.

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Figure 5 Cause of CCF Pilot Audit Failures



2 The audit failure rate decreased slightly over the two-year CCF Pilot, from
 3 33 per cent in year one to 27 per cent in year two. In working with program partners
 4 and the LIAC, anecdotal comments have been made that the applicant is being
 5 asked for too much information or the type of information being sought is hard for the
 6 applicant to produce. Comments have also referenced customers not fully
 7 understanding the CCF Pilot requirements when they apply. BC Hydro introduced
 8 improvements to the CCF application form in May 2019 to facilitate an applicant's
 9 better understanding of the CCF Pilot eligibility criteria, and to make the application
 10 form more user-friendly. It is assumed that these improvements helped contributed
 11 to the improved audit failure rate.

1 **2.2 CCF Pilot Costs**

2 **2.2.1 Setup Costs**

3 As reported in the Year One Evaluation, the actual cost of setting up the CCF Pilot
4 was \$267,271.²¹ No additional setup costs were incurred in the second year of the
5 program.

6 **2.2.2 Operating Costs**

7 In the CEF Application, BC Hydro estimated the annual operating costs for the CCF
8 Pilot to be \$900,000. Total actual operating costs after two years operation is
9 \$997,818. The annualized operating cost of \$498,909 is 45 per cent lower than
10 originally estimated.

11 [Table 7](#) below provides a comparison between the estimated annual operating costs
12 and the actual annualized two-year operating costs for the CCF Pilot for the period
13 of May 1, 2018 to April 30, 2020.²²

²¹ Year One Evaluation Report page 14.

²² In this Evaluation Report, BC Hydro uses the term 'operating costs' in reference to the incremental costs incurred to manage the CCF Pilot and adjudicate applications, excluding the credits applied to customer accounts after grants are approved. For clarity, this differs from the presentation in BC Hydro's Fiscal 2020 to Fiscal 2021 Revenue Requirements Application which includes grants in Customer Crisis Fund Operating Costs.

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Table 7 Estimated and Actual Year One and Two CCF Pilot Operating Cost (Excluding Grants)

CCF Pilot Annual Operating Costs	Estimated Annual Cost (\$)	Year 1 Actual Cost (\$)	Year 2 Actual Cost (\$)	Actual Annualized (\$)
Program Management	200,000	74,069	29,672	51,871
Administration and Adjudication	450,000	381,044	349,757	365,401
Information Technology Systems	50,000	38,098	0	19,049
Training	10,000	9,001	232	4,617
Program Evaluation	30,000	11,205	24,618	17,911
Community Service Organizations Application Support	160,000	44,763	35,358	40,060
Total Annual Operating Costs	900,000	558,179	439,639	498,909

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The most significant reasons for lower actual costs are program management, information technology systems, and community service organization costs. More specifically:

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- The program manager had been forecast as a full-time resource. However, as program operations matured, program management resourcing was gradually reduced to 0.2 of an FTE;
- There were no additional charges for information technology in Year 2; and
- The required level of community service organization support was lower than initially estimated, with online applications to bchydro.com (91 per cent of all applications) being the primary channel for submitting applications.

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2.2.3 Pilot Participation and Grants

[Table 8](#) below provides a comparison summary of the estimated and actual participation as well as the amount of grants approved.

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Table 8 Estimated and Actual CCF Pilot Participation

CCF Pilot Participation Results	Estimated	Year 1 Actual (Reported)	Year 2 Actual	Actual Annualized
Grant Applications Received	15,000	6,416	13,719	10,068
Grants Provided	10,250	2,282	4,137	3,193
Average Grant Amount (Net of Reversals After Audit) (\$)	400	371	350	360
Total Grants (\$)	4,100,000	847,518	1,450,034	1,148,776

3 As shown above, both the number of grant applications received and the number
 4 of grants provided were lower than originally contemplated in the CEF Application. In
 5 the CEF Application, BC Hydro explained that it would be very difficult to accurately
 6 forecast customer participation because the CEF Pilot was new and other
 7 jurisdictions' programs offered little comparative value.

8 Participation and awareness of the CCF Pilot was heightened by the end of year
 9 two with the onset of the COVID-19 pandemic. Customers seeking assistance from
 10 BC Hydro in March were directed to apply to the CCF, and BC Hydro's
 11 announcement of the COVID-19 Relief Fund in April further helped awareness of the
 12 CCF Pilot and made April 2020 the highest month of application submissions since
 13 the beginning of the CCF Pilot. Correspondingly, total grant applications received in
 14 year two more than doubled the number received in year one. BC Hydro will
 15 continue to monitor the awareness as the province slowly comes out of lockdown
 16 and the provincial economy restarts.

17 **2.3 Conclusions**

18 At the conclusion of the second year of CCF Pilot, BC Hydro received
 19 20,136 grant applications and approved 6,385 applications, totaling \$2,297,552 in
 20 grants. The annualized number of applications was approximately 67 per cent of that
 21 estimated in the CEF Application, and the annualized number of grants approved

1 was approximately 30 per cent of that estimated in the CEF Application. This is due
2 to not having a good basis for estimating participation because of the new and
3 unique nature of the CCF Pilot, as well as the time required to generate awareness
4 and understanding for a new program. The onset of the COVID-19 pandemic raised
5 customer awareness for the CCF Pilot and drove applications to its highest point
6 since the beginning of the pilot.

7 One-third of successful CCF grant applications were rejected following
8 random audits. Failure to provide documentation on request was the reason for
9 reversal of CCF grants in 85 per cent of cases. As a result of this level of audit
10 failures, BC Hydro has increased the target percentage of successful grant
11 applications being audited to 20 per cent, up from 10 per cent that was initially
12 intended.

13 **3 Analysis of CCF Pilot Benefits**

14 This section summarizes the economic assessment of the first two years of
15 CCF Pilot resulting from reduced operating costs associated with notification and
16 collection of overdue bills, creation of a payment arrangement and disconnection
17 and reconnection service, reduced interest costs because of more timely payments,
18 and increased revenue by avoiding losses in consumption (i.e., revenue loss from
19 losing customer consumption), and also evaluates whether the economic benefits
20 are sufficient to offset the program costs.

21 **3.1 Evaluation Objectives**

22 The evaluation objective is to determine the economic benefits to BC Hydro through
23 the first two years of operation of the CCF Pilot. Economic benefits were
24 hypothesized from four sources, as listed in [Table 9](#).

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Table 9 **Evaluation Objectives and Research Questions**

Hypothesized Benefits	Research Questions
Reduced lost revenue due to fewer disconnections	How much lost revenue did CCF prevent?
Reduced cost of collections notifications	How much operating expense was saved by avoiding notifications?
Reduced cost of borrowing from delayed revenues	How much interest was saved by reduced overdue amounts?
Reduced bad debt expense	How much was saved by avoiding bad debt expenses?

3.2 Methodology

The primary methodology used for the evaluation was a quasi-experimental comparison. This methodology compares the parameter of interest from the test group to that of a matched control group. The composition of these groups is explained in [Table 10](#) and [Table 11](#) below. Quasi-experimental designs are necessary where it is not possible to provide a randomly drawn control group. In this case the matched control group was not created from a random sample of the population of all residential customers but rather from a subset of customers with specific financial status criteria as defined by the eligibility criteria of the CCF Pilot Program, i.e., the eligible group. A matched control group was created from the eligible group, using one-to-one matching with the test group customer accounts on several key parameters of the test group as outlined below in [Table 11](#).

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Table 10 Evaluation Objectives, Data and Method

Evaluation Objectives	Data	Method
Reduced Lost Revenue due to fewer Disconnections	<ul style="list-style-type: none"> Collections notices, disconnection and reconnection data for all eligible customers for pilot years, account data from BC Hydro's billing system 	<ul style="list-style-type: none"> Quasi-experimental design
Reduced Cost of Collections Notifications	<ul style="list-style-type: none"> Collections notices for all eligible customers for pilot years, account data from BC Hydro's billing system 	<ul style="list-style-type: none"> Quasi-experimental design
Reduced Cost of Borrowing	<ul style="list-style-type: none"> Collections notices and bad debts for all eligible customers for pilot years, account data from BC Hydro's billing system 	<ul style="list-style-type: none"> Quasi-experimental design
Reduced Bad Debt Expense	<ul style="list-style-type: none"> Collections notices and bad debts for all eligible customers for pilot years, account data from BC Hydro's billing system 	<ul style="list-style-type: none"> Quasi-experimental design

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Table 11 Classification of Groups

Group Name	Description
Eligible	These were residential customers served by one of the CCF eligible rates ²³ and who received any of six types of 'dunning' notices ²⁴ . These notices are issued once a customer is considered overdue with a payment.
Applicants	Eligible customers who applied for the CCF grant.
Test Group / Participants	Customers who received the CCF grant. (Customers who initially received the grant but later failed an audit and had the grant reversed, were removed from the dataset.) These customers form the Test Group for the analyses.
Matched Control Group	The Control Group of CCF Eligible customers matched one-to-one to the Test Group for the quasi-experimental comparisons. The test and matched control groups were matched by building type, primary heating fuel type, overdue amount, billing type, and consumption, all obtained from BC Hydro billing system data. The account close date was also matched to ensure a valid bad debt comparison.

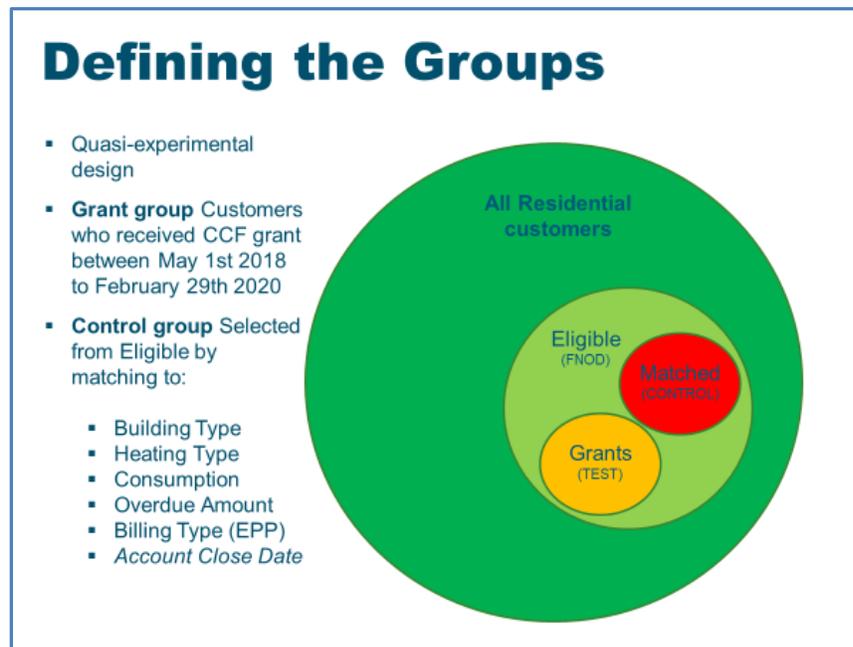
²³ CCF eligible rates are service under RS 1101, 1121, 1107, 1127, 1148, 1151, and 1161.

²⁴ FNODs are issued once a customer is considered overdue with a payment. The six eligible notice types were:

- Important notice without security deposit warning (INTNSD)
- Important notice with security deposit warning (INTWSD)
- FNOD for non-payment without security deposit request (FNDNSD)
- FNOD for non-payment with security deposit request (FNDWSD)
- FNOD for certified cheque or money order (FNDCM)
- FNOD for a security deposit (FNDFSD)

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Figure 6 Defining the Groups



2 All participants were used as test groups while distinct matched control groups were
 3 selected from the eligible group for each month. The matched control groups were
 4 matched on the following parameters:

- 5 (a) Customer housing type (single family dwellings, row houses, apartments,
 6 mobile homes and other);
- 7 (b) Primary customer heating fuel type (electric space heat or non-electric Space
 8 Heat. Customers with electric space heat have significantly higher seasonal
 9 variations in annual electricity consumption);
- 10 (c) Annual consumption;
- 11 (d) Overdue amount as reported in the FNOD;
- 12 (e) Billing type (regular or equal payment plan); and
- 13 (f) Account close date (This was required for the two-year evaluation to allow for a
 14 comparison of numbers of accounts expensed as bad debt).

1 Region was used as a matched control group parameter in the Year One Evaluation.
2 However, this parameter was excluded in the Two-Year Evaluation Report because
3 of the relatively small improvement this matching criterion provided to the statistical
4 significance of the results and the extent to which its inclusion reduced the data
5 available for analysis by shrinking the pool of matched control group accounts.

6 **3.3 Final Notice of Disconnections**

7 A key dataset for this evaluation was the number of FNODs issued. FNOD data was
8 available for the period from May 2018 to February 2020, thereby limiting the study
9 period to 22 months.²⁵

10 Six types of FNOD notices define the customers eligible for the CCF Pilot and who
11 form the population from which the matched control group customers were drawn.
12 BC Hydro issues 80,000 to 100,000 FNODs each month. The FNODs also provide
13 the key financial data on which the evaluation is based. Each of the six types of
14 FNOD serves a different purpose and a customer may receive more than one FNOD
15 in any month. The FNOD may be issued between seven days and 30 days after the
16 bill has been issued, depending on the customer's credit worthiness.²⁶

17 The primary amount reported in the FNOD is the overdue amount. The Two-Year
18 Evaluation used the last FNOD issued to a customer each month to represent the
19 overdue amount for that month.

20 A customer may incur additional charges or pay part of the overdue amount between
21 the time of the last FNOD prior to the CCF grant be provided and the time when the
22 grant was provided. Consequently, the customer's actual account balance at the

²⁵ As noted previously, Dunning notices, including FNODs, were suspended on March 16, 2020 as a result of the COVID-19 pandemic.

²⁶ Credit worthiness ratings or points are accumulated through BC Hydro's dunning (i.e. collection) processes. Points are accumulated for each collection action that BC Hydro performs in response to continued non-payment of an outstanding balance.

1 time of CCF grant being provided may be different to the last Overdue Amount
2 reported in an FNOD.

3 **3.4 The ‘Crisis Period’ Effect**

4 [Figure 7](#) shows the average overdue amount reported by the FNODs issued to
5 participants and indicates that, typically, a participant is affected by an ‘unexpected
6 life event’ which results in an increase in the average overdue amount during the
7 two months prior to the application for the CCF grant. After the grant is applied the
8 average overdue amount is reduced to a range like that prior to the ‘unexpected life
9 event’ impact. These three months (i.e., the two months before the grant plus the
10 grant month) form a ‘Crisis Period’ that is atypical from overdue amounts preceding
11 the ‘unexpected life event’. A comparison of the overdue amount immediately prior
12 to and after the grant being given simply indicates the impact of the grant on the
13 overdue amount but does not measure the longer-term impact of the CCF program
14 on BC Hydro operating costs associated with the CCF Pilot.

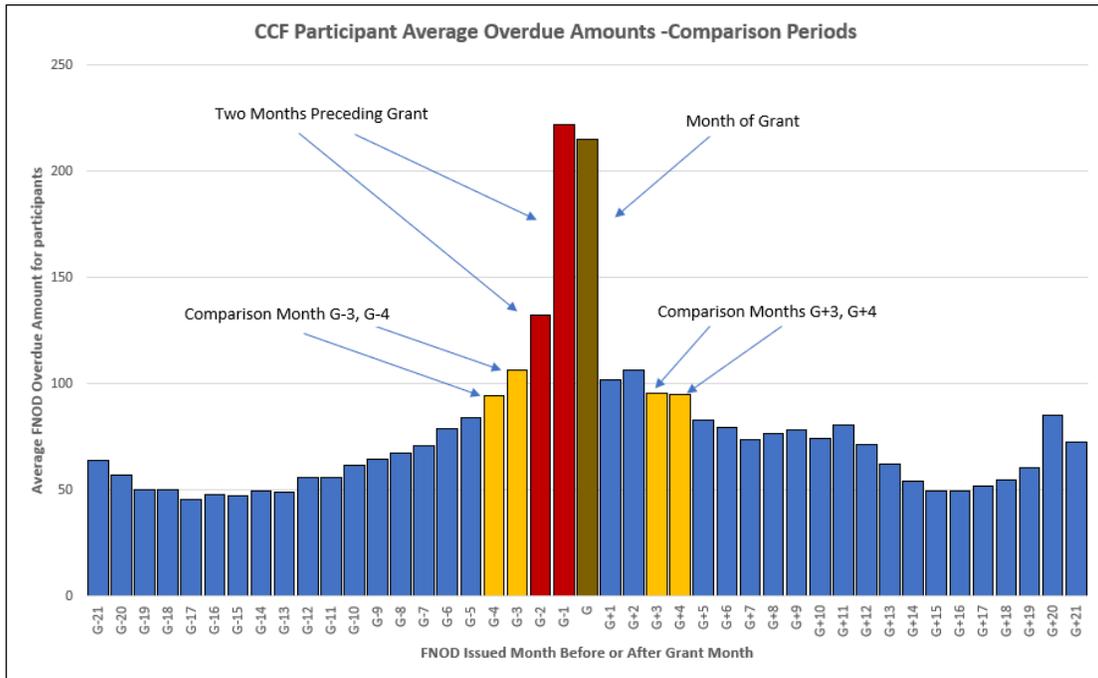
15 [Figure 7](#) represents the average FNOD overdue amounts for all participants during
16 the CCF Pilot, with each month’s cohort of participants time-shifted to align with the
17 month when the grant is given (Grant Month).²⁷

18 [Figure 7](#) also shows the increase in overdue amount in the two months prior to the
19 grant month. It was determined that a comparison of the average overdue amounts
20 in months three and four prior to and after the ‘Crisis Period’ would provide better
21 indication of the longer-term benefit of the CCF Pilot Program, as shown in [Figure 7](#).
22 It should be noted that the impact of increased winter overdue amounts from

²⁷ For example, the bars at G-21 and G+21 represent participants who received the grant in February 2020, which is about 200 to 300 customers. The participant numbers increase toward the center bar labelled G, which represents the month of grant when the bar is based on 22 months of data with about 5,000 customers. Consequently, the reliability of these charts is highest toward the middle and decreases toward the ends for participants who received grants toward the end of the Two-Year evaluation period.

1 January to April is tempered by the high proportion of eligible and participant
2 customers on equal payment plans.²⁸

3 **Figure 7 The Comparison Periods**



4 **3.5 Test and Matched Control Groups**

5 **3.5.1 Test Group**

6 The methodology has been designed to leverage the months for which both
7 pre-grant and post-grant data were available, and to align these months to create a
8 larger test group. Participants with grants approved during the middle 14 months of
9 the CCF Pilot period were selected. This provided the largest possible data of
10 aligned test group with four months of pre- and post-grant data. The four months of
11 pre- and post-grant data permitted comparisons that extend beyond the ‘Crisis
12 Period’.

²⁸ Approximately 60 per cent of Customer Crisis Fund cases are associated with customers on Equal Payment Plan.

1 [Table 12](#) illustrates this methodology using data from the Year One Evaluation. The
2 table shows the selected grant months (yellow) as well as the pre-and post-grant
3 periods of four months (green) to be used for evaluation purposes.

4 **Table 12 Participants for each month of the CCF**
5 **Pilot (Illustrative)**

Month of Grant	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
May	177	177	177	177	177	177	177	177	177	177	177	177
Jun		163	163	163	163	163	163	163	163	163	163	163
Jul			138	138	138	138	138	138	138	138	138	138
Aug				124	124	124	124	124	124	124	124	124
Sep					93	93	93	93	93	93	93	93
Oct						119	119	119	119	119	119	119
Nov							147	147	147	147	147	147
Dec								165	165	165	165	165
Jan									222	222	222	222
Feb										213	213	213
Mar											391	391
Apr												328

6 Realignment of these four datasets results in [Table 13](#), yielded 524 participant
7 accounts with nine aligned months of data.

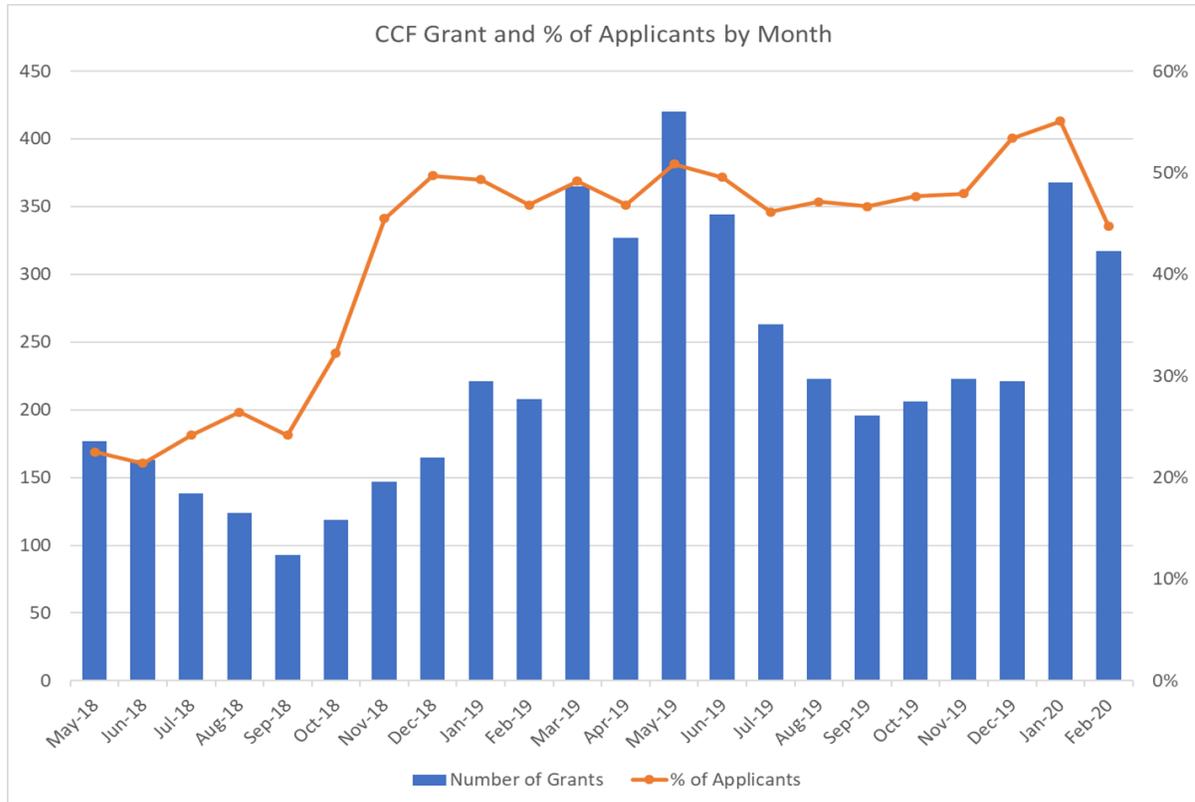
8 **Table 13 Final Approach Test Group (Illustrative)**

Month of Grant	G-4	G-3	G-2	G-1	Grant	G+1	G+2	G+3	G+4
Sep	4 months pre-grant data				93	4 months post-grant data			
Oct					119				
Nov					147				
Dec					165				

9 The Two-Year Evaluation follows this methodology using a 22-month period
10 (May 2018 to February 2020) for analysis. The numbers of monthly approved grants
11 and percentage of monthly approved grants are shown as [Figure 8](#).

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Figure 8 Numbers and Percentages of Approved Grants over 22-month Period



3 Seasonal variability is controlled by the matching process. The seasonal variation,
 4 with peak approval numbers occurring during and after winter, is apparent, and the
 5 stable approval percentage after the finalization of the approval process in late 2018.
 6 The average approved grant amount was stable over the 22-month period, with a
 7 slight seasonal variation. In the Year One Evaluation, BC Hydro concluded there
 8 was insufficient data available after only one year of CCF Pilot operation to make
 9 conclusions about economic benefits. However, enough data is available after
 10 22-months of operations for results to be statistically significant.

11 [Table 14](#) illustrates the difference in sample sizes available for the Two-Year
 12 Evaluation. Specifically, the sample used in the Two-Year Evaluation covers a
 13 14-month period versus only four months in the active analysis period for the

1 Year One Evaluation, due to the four-month pre-grant and post-grant periods
 2 required for the evaluation methodology. The longer sample period enabled a
 3 sample size of 2,797 test group and matched control group customers in the
 4 Two-Year Evaluation as compared to only 462 in the Year One Evaluation.

5 **Table 14 Comparison of Test Group Sizes for**
 6 **Year 1 and Year 2 Evaluations**

Grant Month	Grants	Year 1 Sample	Year 2 Sample
May-18	177	Pre-Test	Pre-Test
Jun-18	163	Pre-Test	Pre-Test
Jul-18	138	Pre-Test	Pre-Test
Aug-18	124	Pre-Test	Pre-Test
Sep-18	93	80	79
Oct-18	119	106	105
Nov-18	147	132	131
Dec-18	165	144	140
Jan-19	221	Post-Test	189
Feb-19	208	Post-Test	179
Mar-19	365	Post-Test	323
Apr-19	327	Post-Test	273
May-19	420		359
Jun-19	344		294
Jul-19	263		223
Aug-19	223		181
Sep-19	196		155
Oct-19	206		166
Nov-19	223		Post-Test
Dec-19	221		Post-Test
Jan-20	368		Post-Test
Feb-20	317		Post-Test

7 A total of 6,385 CCF grant applications were approved during the 24-month
 8 evaluation period for operational performance. The 2,797 granted applicants
 9 included in the test group sample is approximately 44 per cent of all grant

1 recipients.²⁹ Both the first-year and second-year samples were slightly smaller than
2 the actual grant numbers as some grant customers were excluded due to inability to
3 find matched control customers for them.

4 **3.5.2 Matched Control Group**

5 A matched control group was created by matching the customer accounts in test
6 group to customers from the eligible control group, based on the following six
7 parameters:

- 8 1. Customer account housing type;
- 9 2. Primary heating fuel type (electric heating customers have much more seasonal
10 variation than non-electric heating customers);
- 11 3. Payment option (standard or equal payment);
- 12 4. FNOD overdue amount (during or adjacent to the month the FNOD letter was
13 sent to the matched test group account);
- 14 5. Annual energy consumption; and
- 15 6. Account close date (Needed to ensure an accurate comparison of accounts
16 expensed as bad debts).

17 The categorical parameters for housing type, primary heating fuel type and payment
18 option were matched exactly in each case. The FNOD overdue amount was
19 considered the most important variable parameter and was matched to within
20 10 per cent. Due to the timing issues for FNOD letters (for example an FNOD
21 'caused' in June may be issued in July), a match from an adjacent month was
22 considered acceptable. The annual consumption variable was deemed less
23 significant³⁰ and the successful match requirement was relaxed by matching to the

²⁹ A total of 177 applicants received the grant twice; 134 of these applicants are in the test group sample.

³⁰ Annual consumption is usually a key parameter in BC Hydro's Demand Side Management evaluations that test consumption impacts, but less important for financial evaluations.

1 closest annual consumption to ensure a larger proportion of matches. The account
 2 close date was matched to within one month for each case.

3 **3.6 Difference in Differences (DID) Methodology**

4 Although the test and control groups were matched as closely as possible with
 5 available data, some selection bias may exist, such as income disparity and whether
 6 members of the matched control group were also impacted by an ‘unplanned life
 7 event’. To limit the potentially confounding extraneous effects and selection bias, the
 8 DID technique was applied to measure the differences between the test and
 9 matched control groups over time. The DID technique effectively reduces the impact
 10 of unexplainable changes that affect both the test and matched control groups. The
 11 DID technique provides an estimate of the net effect of the CCF Pilot, controlling for
 12 the variables described above.

13 A variable y is applied here to represent the “measures of interest” for this
 14 evaluation. In this study, as stated before, the “measures of interest” are
 15 disconnection counts, bad debt counts, FNOD letters counts, and FNOD overdue
 16 amount. And \bar{y} is the average value of the corresponding measure. As shown in the
 17 [Table 15](#) below, the DID effect can be estimated by using the formula in the right
 18 lower cell.

19 **Table 15 DID Estimation Results**

	Before	After	Change
Test	$\bar{y}_{pre,test}$	$\bar{y}_{post,test}$	$\bar{y}_{post,test} - \bar{y}_{pre,test}$
Control	$\bar{y}_{pre,ctrl}$	$\bar{y}_{post,ctrl}$	$\bar{y}_{post,ctrl} - \bar{y}_{pre,ctrl}$
Difference	$\bar{y}_{pre,ctrl}$ $- \bar{y}_{pre,test}$	$\bar{y}_{post,ctrl}$ $- \bar{y}_{post,test}$	$(\bar{y}_{post,ctrl} - \bar{y}_{pre,ctrl})$ $- (\bar{y}_{post,test} - \bar{y}_{pre,test})$

1 A regression model can also be applied to estimate the DID effect and to test the
2 statistical significance of the difference between test and control group over time.

3
$$y = \alpha_0 + \alpha_1 \cdot Time + \alpha_2 \cdot Group + \alpha_3 \cdot Time \cdot Group + \varepsilon$$

4 Where y is the dependent variable as defined above. “Time” and “Group” are dummy
5 variables. Time is ‘0’ if the observation is before the grant and Time is ‘1’ if after the
6 grant. Group is ‘0’ if the observation is from Control Group and Group is ‘1’ if the
7 observation is from Test Group.

8 The coefficients’ estimator can be interpreted as follows:

9 **Table 16 DID Regression Parameters**

	Before	After	Change
Test	$\hat{\alpha}_0 + \hat{\alpha}_2$	$\hat{\alpha}_0 + \hat{\alpha}_1 + \hat{\alpha}_2 + \hat{\alpha}_3$	$\hat{\alpha}_1 + \hat{\alpha}_3$
Control	$\hat{\alpha}_0$	$\hat{\alpha}_0 + \hat{\alpha}_1$	$\hat{\alpha}_1$
Difference (Test – Control)	$\hat{\alpha}_2$	$\hat{\alpha}_2 + \hat{\alpha}_3$	$\hat{\alpha}_3$

10 The estimator for the coefficient of the interaction term (*Time·Group*) is the DID
11 estimator of the measure of interest and the corresponding p-value³¹ can be used as
12 an indicator of statistical significance.

13 The DID methodology was applied to each measure of interest and the p-value,
14 which provides an indication of statistical significance of the outcome for each of the
15 tests, is reported with the Evaluation Results section (section [3.8](#) below).

³¹ The P value, or calculated probability, is the probability of finding the observed results when the null hypothesis of a study question is true. The p-value is a number between 0 and 1. A small p-value indicates strong evidence against the null hypothesis, so you reject the null hypothesis.

1 **3.7 Methodology to Determine Hypothesized Economic Benefits**

2 **3.7.1 Lost revenue due to disconnections**

3 The methodology employed to determine the loss of revenue avoided was to
4 compare the average disconnection rate of the matched control group to that of the
5 test group, and then to estimate the average loss of revenue due to disconnections
6 in the population of eligible customers (defined above in [Table 11](#) as residential
7 customers served by one of the CCF eligible rates and who received any of the
8 six types of dunning notice).

9 The total reduction in lost revenue would be the difference in disconnection rates
10 multiplied by the average lost revenue per customer for each month after
11 disconnection for the first two years of the CCF Pilot.

12 **3.7.2 Cost of collections notifications**

13 The reduction in cost of collection notifications was determined by comparing the
14 average cost of notifications to the matched control group to the average cost of
15 notifications to the test group after the CCF grant was provided. A decrease in the
16 average number of collections notification indicates a reduction in the costs. The
17 reduction in costs would be the decrease in average number of collections multiplied
18 by the average cost per notification, by month after the CCF grant was provided.

19 **3.7.3 Cost of borrowing from delayed revenues**

20 The reduction in cost of borrowing from delayed revenues was determined by
21 comparing the average amount in arrears for the matched control group to the
22 average amount in arrears for the test group after a CCF grant was provided. A
23 decrease in the average in arrears equates to a reduced need for BC Hydro to
24 borrow funds because of delayed payments.

1 **3.7.4 Bad debt expense**

2 The reduction in bad debt expense was determined by comparing the average
3 amount in bad debt for the matched control group to the average amount in bad debt
4 for the test group after a CCF grant was provided. A decrease in the average bad
5 debt indicates a reduction in BC Hydro's costs thereof.

6 **3.8 Evaluation Results**

7 **3.8.1 Overview**

8 The evaluation methodologies described above effectively consist of two steps:

9 (a) Determine the difference between the test and matched control groups for a
10 given measure of interest.

11 (b) If the difference indicates a cost saving, estimate the value of the cost saving.

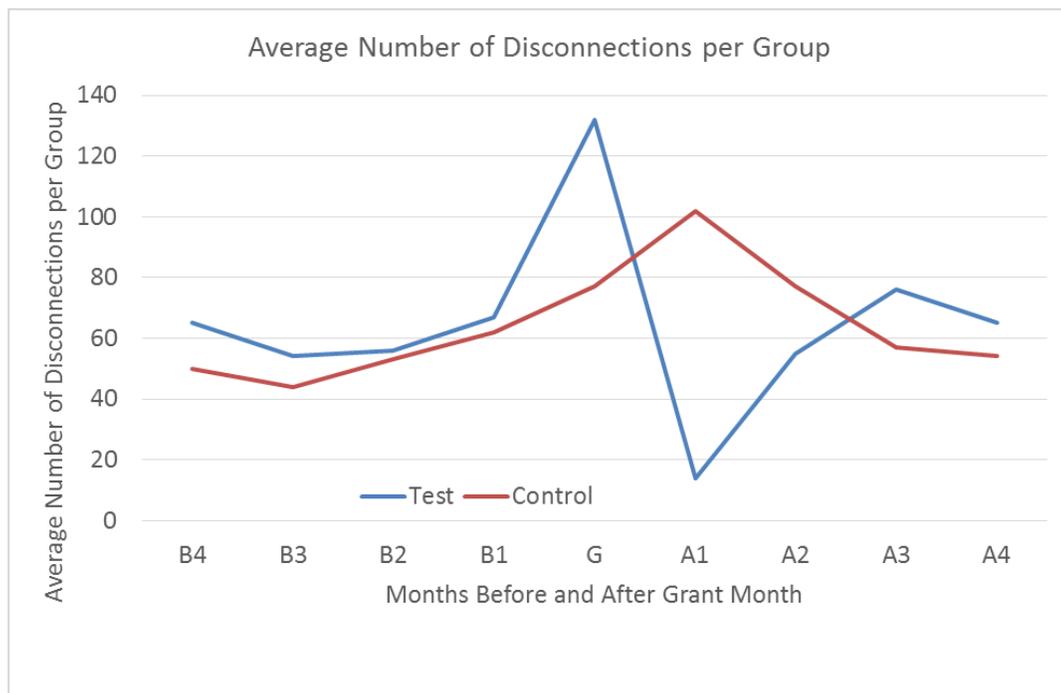
12 As is common practice for evaluations that use a quasi-experimental design and DID
13 technique, a confidence level of 90 per cent was applied to significance tests for this
14 evaluation, and the range of the estimate for the 90 per cent confidence level is
15 provided. As some comparisons failed the significance test at the 90 per cent
16 confidence level, the range of the estimate at the 80 per cent confidence level is also
17 provided. Although some tests failed to show significance at both the 90 per cent
18 and 80 per cent confidence levels, estimates of the annual savings were calculated
19 for each test.

20 **3.8.2 Lost revenue due to disconnections**

21 [Figure 9](#) shows the number of disconnections due to failure to pay for service that
22 occurred for the test and matched control groups for the four months of pre- and
23 post-grant evaluation period, i.e., the nine-month evaluation period. This nine-month
24 period includes the data for the middle 14 months of the CCF Pilot period realigned
25 as described in section [3.5.1](#).

1

Figure 9 Test and Control Disconnection Rate



2 The general trend was similar for both groups, with an increase from the average
 3 disconnection rate during the month prior to the CCF application for the test group or
 4 the FNOD for the matched control group, followed by a steep decline as the grant is
 5 applied for the test group account or the missed payment is applied to the control
 6 group account. The apparent one-month delay between the two groups was likely
 7 due to the matching criterion that allowed a match on overdue amounts one month
 8 on either side of the grant month as described in section [3.5.2](#). The average rate of
 9 disconnections then rose to a similar pre-crisis level after two months, indicating a
 10 return to the ‘norm’ for both groups.

11 The data indicated that the test group had about a 10 percent higher disconnection
 12 rate than the matched control group. The DID estimator showed that there were on
 13 average 0.002 more disconnections per customer from the test group than there
 14 were from the matched control group, and the corresponding p-value was 0.8162.
 15 The lower and upper bounds for the estimate at the 80 per cent and 90 per cent

1 confidence levels are listed in [Table 17](#). The difference between the numbers was
 2 too small to have any statistical significance at either 80 per cent or 90 per cent
 3 confidence levels, as shown in [Table 16](#). This result means that the CCF Pilot had
 4 no impact on customer disconnections.

5 **Table 17 Upper and Lower Estimate Bounds for**
 6 **the Disconnection Rate**

Disconnection Estimate Bounds	Lower	Upper
80% Confidence Interval	-0.012	0.008
90% Confidence Interval	-0.014	0.011

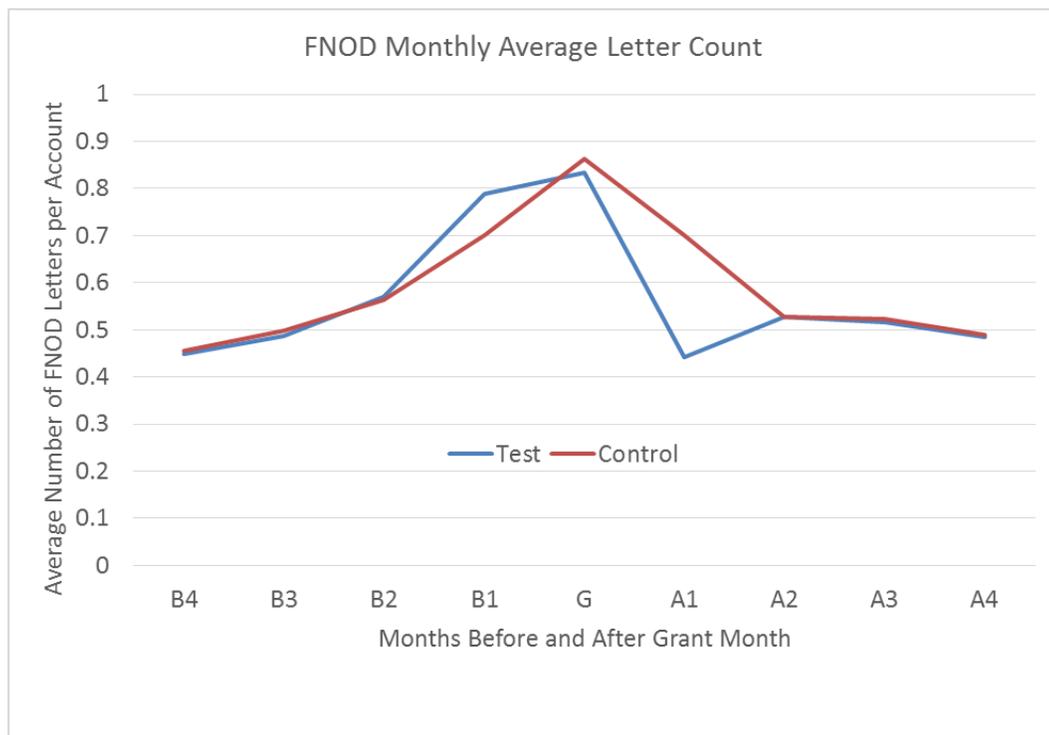
7 As there is not a statistically significant difference in the disconnection rate for test
 8 group customers, BC Hydro concludes the CCF Pilot did not provide economic
 9 benefits in the form of reduced revenue loss.

10 **3.8.3 Cost of collections notification**

11 [Figure 10](#) shows the average number of FNOD collection notice letters issued for the
 12 test and matched control Groups over the nine-months analyzed.

1

Figure 10 Average FNOD Letter Counts



2 Both test and matched control group accounts experienced an FNOD letter rate of
 3 about 0.5 letters per month prior to and after the event that triggered the CCF
 4 application from test group accounts, or a payment of arrears owing on matched
 5 control group accounts. The letter rate increased to about 0.8 letters per month
 6 during the ‘Crisis Period’ (refer to section [3.4](#)).

7 The control group was issued approximately the same number of FNOD letters as
 8 the test group. The DID estimator indicated that there were on average 0.006 more
 9 FNOD letters for the Test Group than there were for the Control Group, and the
 10 corresponding p-value was 0.8511. The lower and upper bounds for the estimate at
 11 the 80 per cent and 90 per cent confidence levels are listed in [Table 18](#). The
 12 difference between the numbers was too small to have any statistical significance.
 13 This result means that the CCF Pilot had no impact on the frequency of FNOD
 14 collection notice letters.

1
 2

Table 18 Upper and Lower Estimate Bounds for the Number of FNOD Letters Issued

FNOD Letter Estimate Bounds	Lower	Upper
80% Confidence Interval	-0.048	0.035
90% Confidence Interval	-0.059	0.047

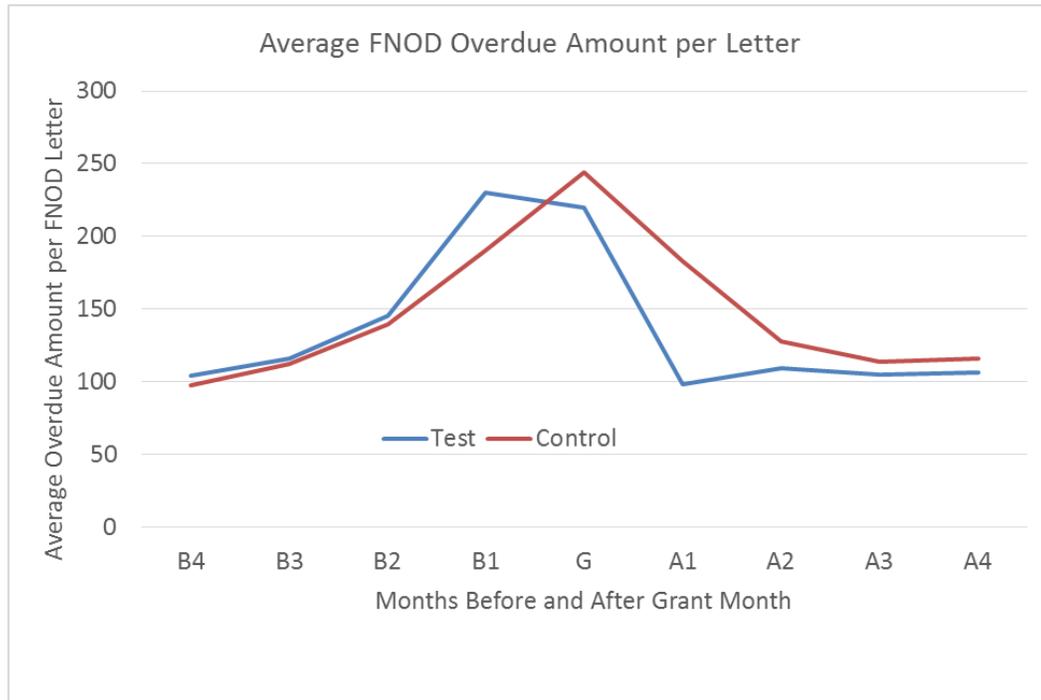
3 As there is not a statistically significant difference in the number of collections
 4 notices sent for test group and matched control group accounts, BC Hydro
 5 concludes the CCF Pilot did not provide economic benefits in the form of reduced
 6 collections notification costs.

7 **3.8.4 Cost of borrowing from delayed revenues**

8 The overdue amounts for the two groups are shown in [Figure 11](#). The average
 9 overdue amount for both groups was slightly more than \$100 prior to the event that
 10 triggered an increase one or two months before the month the grant was issued.
 11 Both groups experienced an increase to over \$200 followed by a sharp reduction as
 12 the grant was applied to the test group account or payment applied to the matched
 13 control group account. The delay between the reduction for the test group and the
 14 matched control group accounts may be due to the matching criterion tolerances
 15 described in section [3.5.2](#) or simply to the time required for the payment to be
 16 applied to the matched control group. The general trend for the test group was a
 17 slight decrease in the overdue amount during the four months following the grant,
 18 while the control group was slightly higher.

1

Figure 11 Average Overdue Amounts



2 The DID estimated saving was \$28.66 with a p-value of 0.0179. The lower and
 3 upper bounds for the estimate at the 80 per cent and 90 per cent confidence levels
 4 are listed in [Table 19](#). The difference between the numbers was statistically
 5 significant at the 90 per cent confidence level. This result means that the CCF Pilot
 6 had an impact on the magnitude of overdue amounts following the issuance of the
 7 grant, and therefore on BC Hydro’s cost of borrowing.

8
9

Table 19 Upper and Lower Estimate Bounds for the Average Overdue Amount

FNOD Letter Estimate Bounds	Lower (\$)	Upper (\$)
80% Confidence Interval	13.17	44.15
90% Confidence Interval	8.76	48.56

10 As a result of the difference in average arrears at FNOD being statistically
 11 significant, it is concluded that economic benefits result from the CCF Pilot in the

1 form of a reduction in borrowing costs for delayed revenues. The magnitude of this
2 impact is calculated as \$156 per year as follows:

- 3 • Reduced FNOD overdue amount by \$28.66 per CCF grant recipient over
4 two months;
- 5 • BC Hydro Weighted Average Cost of Debt of 3.74 per cent per year; and
- 6 • 6,385 grants over 22 months.

7 The benefit of reduced borrowings from a reduction in delayed revenues is:

$$8 \quad 6,385/22 * (\$28.66/2) * (3.74\%/12) = \$12.96 \text{ per month,}$$

9 or approximately \$156 per year.

10 **3.8.5 Bad Debt Expense**

11 Economic benefit would arise from the CCF Pilot if the CCF grant results in a
12 reduction of unpaid accounts that are closed and are expensed as bad debts. During
13 the Two-Year Evaluation, 59 of the test group accounts were closed and expensed
14 as bad debts.

15 As described in section [3.5.2](#), the matched control group had to be matched on
16 account close date as well, to ensure that the matched control group had the same
17 potential to end up in bad debt as the test group.

18 The DID methodology could not be applied to the bad debts benefit evaluation, as
19 no pre-test data are available. Instead, a simple comparison between the number of
20 bad debt cases and amounts for the test and control groups was made. This means
21 the result does not control for the variables described in section [3.5.2](#), and to the
22 extent those variables may impact bad debt, there may be bias in the result. The
23 number of accounts expensed as bad debts and their corresponding dollar values
24 are tabulated below.

1 **Table 20** **Numbers and Dollar Amounts for Bad**
 2 **Debt Accounts**

Bad Debt Accounts	Number	Amount (\$)
Test Group	59	23,870
Control Group	30	18,478
Benefit		-5,392

3 These figures indicate that almost twice as many CCF Pilot grant recipients as
 4 Control Group accounts were closed and expensed as bad debts, as well as that the
 5 CCF Pilot grant recipients had over \$5,000 more in bad debt than accounts in the
 6 Control Group. Although the difference between the two groups is statistically
 7 significant, the small sample sizes (59 and 30), and the fact that the DID method
 8 could not be used indicates a low confidence in the benefit estimate.

9 As a result of this analysis, it is concluded there is no evidence of economic benefits
 10 in the form of lower bad debt expense that result from the CCF Pilot.

11 **3.9 Limitations**

12 Monthly cohorts of CCF grant recipients and matched control groups accounts had
 13 14 months of comparison cohorts, and the test and control group samples consisted
 14 of about 2,800 customers accounts. These datasets were large enough to reveal
 15 benefits if they had existed.

16 The evaluation results were derived from disparate data on overdue amounts,
 17 disconnection and reconnection orders, FNOD notices, and other sources that had
 18 to be correlated and aligned timewise. The time sequence of events for each
 19 customer account varies depending on their billing period, account type, and credit
 20 score. Customers may have changed their payment arrangement, closed their
 21 account, moved to another home, or simply left the premise with no forwarding
 22 address during the evaluation period. The evaluation scope did not include review of
 23 all the transaction details for each applicant.

3.10 Summary of Analysis of CCF Pilot Benefits

[Table 21](#) summarises the annual economic benefits from the CCF Pilot Program after the 22-month operational period. [Table 22](#) lists the additional benefit due to the bad debt comparison.

Table 21 Summary of CCF Pilot DID Benefits

CCF Pilot DID Benefit Category	Operational Impact Measured	Economic Benefit	Statistical Significance
Lost revenue due to disconnections	0.002 more disconnections per customer for two months from the Test Group	No reduction in lost revenue	No
Collections notifications	0.006 more FNOD letters per customer for two months for the Test Group	No reduction in collections costs	No
Cost of Borrowing from Delayed Revenues	Reduction in arrears at FNOD by \$28.66 per customer for two months for the Test Group	\$156 per year reduction in borrowing costs	Yes
Annual Benefit to BC Hydro (\$)		156	

Table 22 Summary of CCF Pilot Comparison Benefits

CCF Pilot Comparison Benefit Category	Benefit
Bad debt expense	No reduction in bad debt expense.

The DID benefit estimates are not significant at the 80 per cent or 90 per cent confidence levels, except for reduced credit costs. The bad debt benefit estimate is statistically significant but has a low confidence level due to the small sample sizes and the fact that the DID method could not be used for the measure of interest.

The evaluation concludes that there is no evidence of economic benefits arising from the CCF Pilot.

4 Public Opinion

For the Two-Year Evaluation Report, BC Hydro conducted an omnibus survey to measure the ongoing awareness of the CCF Pilot Program as well as to assess the ongoing support for the CCF Rate Rider. The survey was intended to see if public opinion was similar to results identified in the comprehensive survey included in the Year One Evaluation Report.

4.1 Survey Objective and Methodology

The specific objectives of the public opinion survey were to measure and assess:

- the level of awareness of the CCF Pilot;
- the level of awareness of the CCF Rate Rider on the bill; and
- how supportive the customers are of a CCF Pilot program being funded through a rate rider?

This omnibus survey was administered by Leger Marketing from May 29, 2020 to May 31, 2020 to a general population sample of 1,000 British Columbians. No margin of error can be associated with a non-probability sample (online panel in this case). However, for comparative purposes, a probability sample of 1,000 respondents would have a margin of error of ± 3.1 per cent, 19 times out of 20.

The survey was divided into three regions (Greater Vancouver, Greater Victoria, Rest of BC), three age groups (18 to 34, 35 to 54, 55+), and gender (male, female) to provide general demographic information.

This survey approach was chosen in order to gauge the perceptions of the CCF from a large, representative sample of British Columbians in a cost- and time-effective way.

1 **4.2 Survey Results³²**

2 **4.2.1 Awareness of the CCF Pilot**

3 A total of 46 per cent of British Columbians had an awareness of the CCF Pilot.
4 Those persons living in the Greater Vancouver region had the highest awareness at
5 48 per cent followed by the Rest of BC (45 per cent) and Greater Victoria
6 (42 per cent). Persons between the ages 35 to 54 also had an awareness of
7 48 per cent followed by 18 to 34 (46 per cent) and 55+ (44 per cent).

8 **4.2.2 Initial Public Support for the CCF Pilot**

9 In view of soliciting their views of the CCF Pilot in its broad purpose and goal, all
10 respondents were asked if *'it's important to recognize that some customers may face*
11 *life events that cause temporary financial challenges in paying household bills?'* In
12 response, 90 per cent of respondents agreed with this statement. This response can
13 be considered fairly firm as 60 per cent 'strongly agreed' with this statement and only
14 30 per cent 'somewhat agreed'. This response was firm across all regions and age
15 groups. Agreement was significantly strong in the Greater Victoria region leading all
16 respondents with 97 per cent. [Figure 12](#) below shows the percentage of respondents
17 who answered Agree or Strongly Agree.

³² The results of the Public Opinion survey are provided as Appendix A to this Evaluation Report.

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Figure 12 Survey Question – “Is it important to recognize customers may face life events that cause temporary financial challenges in paying household bills?”



Chart shows sum of the percentage of those who answered Agree or Strongly Agree.

5 All respondents were then asked if *‘it’s appropriate for BC Hydro to continue offering*
6 *a program such as the Customer Crisis Fund to help customers avoid disconnection*
7 *of service when facing a temporary financial crisis?’* Similar to the previous question,
8 88 per cent of respondents agreed with this statement. This response can also be
9 considered fairly firm as 58 per cent ‘strongly agreed’ with this statement and only
10 30 per cent ‘somewhat agreed’. This favourable response for the CCF Pilot Program
11 was consistent across all regions and age groups with the Greater Victoria region
12 leading all respondents with 95 per cent. [Figure 13](#) below shows the percentage of
13 respondents who answered Agree or Strongly Agree.

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Figure 13 Survey Question – “Is it appropriate for BC Hydro to continue offering a program such as the Customer Crisis Fund to help customers avoid disconnection of service when facing a temporary financial crisis?”

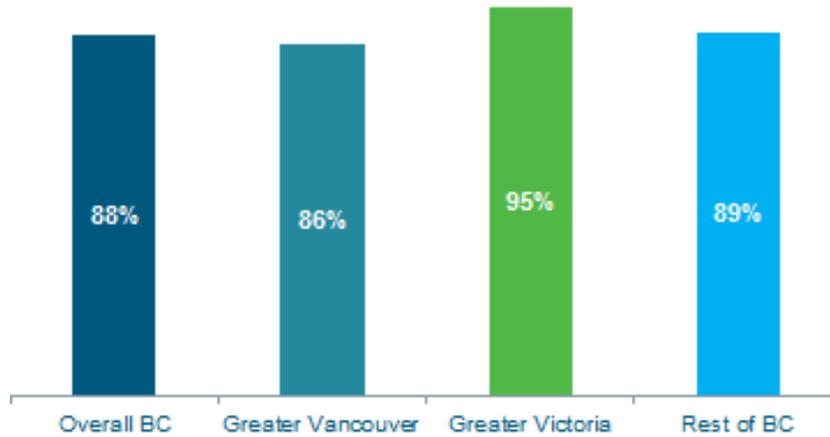


Chart shows sum of the percentage of those who answered Agree or Strongly Agree.

7 **4.2.3 Continuing Public Support for the CCF Pilot**

8 In a final question, respondents were asked if they were ‘*supportive of BC Hydro*
9 *continuing to charge a small fee (roughly 13 cents a month) to keep the Customer*
10 *Crisis Fund?*’ In response, 67 per cent of respondents agreed with this statement
11 with 38 per cent ‘strongly agreeing’ and 29 per cent ‘somewhat agreeing’. The
12 strongest regional support came from Greater Victoria with 78 per cent followed by
13 Greater Vancouver with 67 per cent and Rest of BC with 66 per cent. Persons
14 between the ages of 18 to 35 had the highest support with 73 per cent with persons
15 aged 35 to 54 and 55+ both registering 65 per cent support. Males and females alike
16 equally support CCF funding at 67 per cent. [Figure 14](#) below shows the percentage
17 of respondents who answered Agree or Strongly Agree.

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Figure 14 Survey Question – “I am supportive of BC Hydro continuing to charge a small fee (roughly 13 cents a month) to keep the Customer Crisis Fund.”

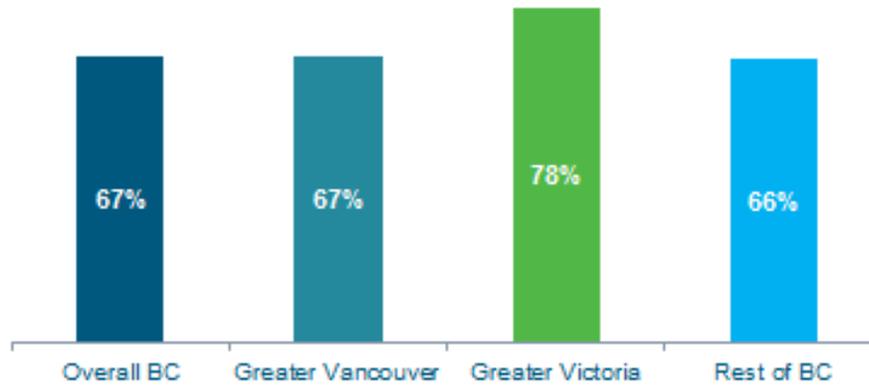


Chart shows sum of the percentage of those who answered Agree or Strongly Agree.

5 In summary, the public opinion survey conducted for this Two-Year Evaluation
6 served to confirm that the level of public support shown in the Year One Evaluation
7 has remained. Among 1,000 British Columbians polled, there is strong agreement
8 for the need of the CCF. This agreement was generally softer when respondents
9 were asked for the continuation of the CCF Rate Rider. However, it should be noted
10 that while the results of the survey in the Year 1 Evaluation was from a
11 representative sample of BC Hydro account holders and CCF grant recipients, the
12 public opinion survey presented here was from a sample of British Columbians, not
13 all of whom may be BC Hydro account holders.

14 **5 Conclusions**

15 **5.1 CCF Pilot Operations**

16 From May 1, 2018 to April 30, 2020, BC Hydro received 20,136 grant applications
17 and approved 6,385 application totaling \$2,297,552 in grant. Of customers receiving
18 grants, 85 per cent had not yet been disconnected at the time the grant application

1 was submitted, which indicates that the CCF Pilot was successful in helping these
2 customers avoid disconnection.

3 The application approval rate improved significantly as processes and program
4 messaging was refined. In the second year, 55 per cent of applications were
5 approved. Of applications that were rejected, the top three reasons for rejection
6 were: (1) account is not in arrears or is not facing disconnection, (2) the applicant is
7 not experiencing a temporary financial crisis, and (3) the applicant has not provided
8 requested information.

9 Approximately 18 per cent of approved applications were audited during the first
10 two years of the CCF Pilot. Approximately one-third of audits resulted in reversal of
11 the CCF grant, with the primary reason being that applicants didn't provide
12 documentation in response to the audit request.

13 Actual operating costs averaged \$498,909 per year during the first two years of the
14 CCF Pilot. Costs decreased throughout the pilot as operations were better
15 understood and efficiencies were identified.

16 **5.2 CCF Pilot Benefits**

17 The purpose of the CCF Pilot is to determine if there are economic benefits resulting
18 from operational cost savings and decreases to revenue losses and bad debt
19 expenses which would offset program costs.

20 The evaluation compared monthly cohorts of Grantees and matched control groups
21 over a period of 14 months, with the test and control Group samples each consisting
22 of about 2,800 customers. These datasets were large enough to reveal savings if
23 they had existed.

24 The analyses of disconnection volumes, notification and collection costs, and bad
25 debt expense did not identify statistically significant economic benefits for those
26 aspects of BC Hydro's operations as a result of the CCF Pilot Program. An annual

1 benefit of approximately \$156 was identified for reduced borrowings from a reduction
2 in delayed revenues.

3 Accordingly, the evaluation of the pilot program indicates there is no evidence of
4 economic benefits arising from the CCF Pilot.

5 **5.3 Public Opinion**

6 In May 2020, BC Hydro commissioned a short omnibus survey to measure the
7 ongoing awareness of the CCF as well as to gauge sentiment for the ongoing
8 support for the CCF Rate Rider.

9 In summary, among 1,000 British Columbians polled, 88 per cent indicated it is
10 appropriate for BC Hydro to continue offering a program such as CCF to help
11 customers avoid disconnection of service when facing a temporary financial crisis. In
12 addition, over 67 per cent of respondents indicated they supported of BC Hydro
13 continuing to charge a small fee to continue CCF.

**Customer Crisis Fund Pilot Program
Two-Year Evaluation Report**

Appendix A

Public Opinion Survey Results

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1.2 Survey Questions.....	3

1 Introduction

2 For the Two-Year Evaluation Report, BC Hydro conducted an omnibus survey to
3 measure the ongoing awareness of the CCF Pilot Program as well as to assess the
4 ongoing support for the CCF Rate Rider. The survey was intended to see if public
5 opinion was similar to results identified in the comprehensive survey of BC Hydro
6 customers included in the Year One Evaluation Report.

7 1.1 Survey Objective and Methodology

8 The specific objectives of the public opinion survey were to measure and
9 assess:

- 10 • the level of awareness of the CCF Pilot;
- 11 • the level of awareness of the CCF Rate Rider on the bill; and
- 12 • how supportive the customers are of a CCF Pilot program being funded through
13 a rate rider?

14 This omnibus survey was administered by Leger Marketing from May 29, 2020 to
15 May 31, 2020 to a general population sample of 1,000 British Columbians. No
16 margin of error can be associated with a non-probability sample (online panel in this
17 case). However, for comparative purposes, a probability sample of
18 1,000 respondents would have a margin of error of ± 3.1 per cent, 19 times out of 20.

19 The survey was divided into three regions (Greater Vancouver, Greater Victoria,
20 Rest of BC), three age groups (18 to 34, 35 to 54, 55+), and gender (male, female)
21 to provide general demographic information.

22 The survey approach was chosen in order to gauge the perceptions of the CCF from
23 a large, representative sample of British Columbians in a cost- and time-effective
24 way.

1 **1.2 Survey Questions**

BCH1: Prior to today, were you aware of the Customer Crisis Fund?

	TOTAL	REGION			AGE			GENDER	
		Greater Vancouver	Greater Victoria	Other region	18-34	35-54	55+	MALE	FEMALE
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(L)	(M)
WEIGHTED TOTAL	1000	531	81	388	266	333	402	485	515
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unweighted Total	1000	500	100	400	211	303	486	505	495
AWARE	46%	48%	42%	45%	46%	48%	44%	50%	42%
Yes	21%	23%	20%	19%	18%	25%	20%	23%	20%
I had a vague idea	25%	25%	22%	25%	27%	23%	24%	28%	22%
Never heard of it	54%	52%	58%	55%	54%	52%	56%	50%	58%

BCH2Ac1: It's important to recognize that some customers may face life events that cause temporary financial challenges in paying household bills. To what extent do you agree or disagree with the following statements?

	TOTAL	REGION			AGE			GENDER	
		Greater Vancouver	Greater Victoria	Other region	18-34	35-54	55+	MALE	FEMALE
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(L)	(M)
WEIGHTED TOTAL	1000	531	81	388	266	333	402	485	515
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unweighted Total	1000	500	100	400	211	303	486	505	495
AGREE	90%	87%	97%	93%	89%	89%	92%	88%	92%
Strongly agree	60%	56%	76%	64%	65%	56%	61%	58%	63%
Somewhat agree	30%	32%	21%	29%	24%	33%	31%	30%	29%
Neither agree nor disagree	8%	10%	2%	5%	9%	8%	6%	9%	6%
DISAGREE	2%	3%	1%	2%	2%	4%	1%	3%	2%
Somewhat disagree	2%	2%	1%	2%	1%	3%	1%	2%	1%
Strongly disagree	1%	1%	0%	0%	1%	1%	0%	1%	0%

BCH2Bc1: It's appropriate for BC Hydro to continue offering a program such as the Customer Crisis Fund to help customers avoid disconnection of service when facing a temporary financial crisis.

To what extent do you agree or disagree with the following statements?

	REGION				AGE			GENDER	
	TOTAL	Greater Vancouver	Greater Victoria	Other region	18-34	35-54	55+	MALE	FEMALE
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(L)
WEIGHTED TOTAL	1000	531	81	388	266	333	402	485	515
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unweighted Total	1000	500	100	400	211	303	486	505	495
AGREE	88%	86%	95%	89%	87%	87%	90%	86%	90%
Strongly agree	58%	54%	80%	58%	58%	53%	61%	55%	60%
Somewhat agree	30%	32%	15%	31%	29%	34%	29%	32%	29%
Neither agree nor disagree	9%	10%	3%	8%	11%	8%	7%	10%	8%
DISAGREE	3%	4%	2%	3%	2%	5%	3%	4%	3%
Somewhat disagree	2%	3%		2%	1%	2%	2%	2%	2%
Strongly disagree	1%	1%	2%	1%	0%	2%	1%	2%	1%

BCH2Cc1: I am supportive of BC Hydro continuing to charge a small fee (roughly 13 cents a month) to keep the Customer Crisis Fund.

To what extent do you agree or disagree with the following statements?

	REGION				AGE			GENDER	
	TOTAL	Greater Vancouver	Greater Victoria	Other region	18-34	35-54	55+	MALE	FEMALE
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(L)
WEIGHTED TOTAL	1000	531	81	388	266	333	402	485	515
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unweighted Total	1000	500	100	400	211	303	486	505	495
AGREE	67%	67%	78%	66%	73%	65%	65%	67%	67%
Strongly agree	38%	36%	47%	40%	43%	34%	39%	38%	39%
Somewhat agree	29%	31%	31%	26%	30%	31%	26%	30%	28%
Neither agree nor disagree	15%	17%	13%	13%	18%	14%	15%	14%	17%
DISAGREE	17%	16%	9%	21%	9%	21%	19%	19%	16%
Somewhat disagree	8%	7%	3%	10%	5%	7%	11%	8%	8%
Strongly disagree	10%	9%	6%	11%	5%	15%	9%	11%	8%

To what extent do you agree or disagree with the following statements?
Summary of AGREE

	REGION			AGE			GENDER		
	TOTAL	Greater Vancouver	Greater Victoria	Other region	18-34	35-54	55+	MALE	FEMALE
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(L)	(M)
WEIGHTED TOTAL	1000	531	81	388	266	333	402	485	515
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unweighted Total	1000	500	100	400	211	303	486	505	495
It's important to recognize that some customers may face life events that cause temporary financial challenges in paying household bills.	90%	87%	97%	93%	89%	89%	92%	88%	92%
			Bd	b					l
It's appropriate for BC Hydro to continue offering a program such as the Customer Crisis Fund to help customers avoid disconnection of service when facing a temporary financial crisis.	88%	86%	95%	89%	87%	87%	90%	86%	90%
			Bd						
I am supportive of BC Hydro continuing to charge a small fee (roughly 13 cents a month) to keep the Customer Crisis Fund.	67%	67%	78%	66%	73%	65%	65%	67%	67%
			bd						

To what extent do you agree or disagree with the following statements?									
Summary of DISAGREE									
	TOTAL	REGION			AGE			GENDER	
		Greater Vancouver	Greater Victoria	Other region	18-34	35-54	55+	MALE	FEMALE
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(L)	(M)
WEIGHTED TOTAL	1000	531	81	388	266	333	402	485	515
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Unweighted Total	1000	500	100	400	211	303	486	505	495
It's important to recognize that some customers may face life events that cause temporary financial challenges in paying household bills.	2%	3%	1%	2%	2%	4%	1%	3%	2%
It's appropriate for BC Hydro to continue offering a program such as the Customer Crisis Fund to help customers avoid disconnection of service when facing a temporary financial crisis.	3%	4%	2%	3%	2%	5%	3%	4%	3%
I am supportive of BC Hydro continuing to charge a small fee (roughly 13 cents a month) to keep the Customer Crisis Fund.	17%	16%	9%	21%	9%	21%	19%	19%	16%