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December 4, 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
Errata No. 1

BC Hydro writes to provide Errata No. 1 to its CCF Pilot Program – Two-Year Evaluation Report filed on July 28, 2020 in compliance with Directive 6 of BCUC Order No. G-166-17.

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

jc/ma

Enclosure

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BC Hydro
Power smart

Customer Crisis Fund Pilot Program
Two-Year Evaluation Report

ERRATA – December 4, 2020

From the July 28, 2020 Report:

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Notes:

1. The annual benefit amount from the reduced cost of borrowings from delayed revenues is updated from approximately $156 to $143; refer to Note 4.
2. Footnote 27 is updated to clarify the information provided in Figure 7.
3. Figure 9 is updated to remove the word “average” as the figure provides the “actual” number of disconnections per group.
4. The calculation for the benefit of reduced borrowings from a reduction in delayed revenues is updated to reflect 24 months rather than 22 months resulting in a

monthly amount of $11.88 rather than $12.96 and an annual amount of approximately $143 rather than $156.

5. A correction to note that the evaluation of the bad debts benefits does not control for the variables “other than those” provided in section 3.5.2, Matched Control Group.
6. Table 21, Summary of CCF Pilot DID Benefits, is updated to correct the benefit amount from the reduced cost of borrowings from delayed revenues from approximately $156 to $143; refer to Note 4.

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

The analyses of disconnection volumes, notification and collection costs, and bad debt expense did not identify statistically significant economic benefits for those aspects of BC Hydro's operations as a result of the CCF Pilot Program. An annual benefit of approximately $~~156~~143 was identified from cost of borrowings from delayed revenues.

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

Public Opinion

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

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

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

3.4 The 'Crisis Period' Effect

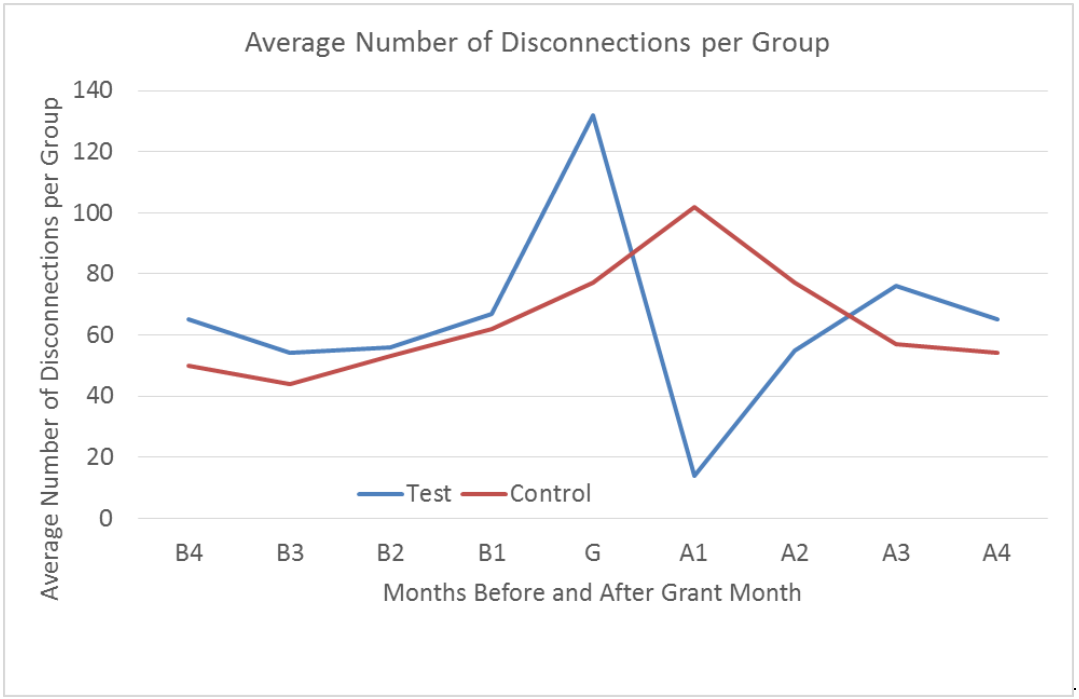
Figure 7 shows the average overdue amount reported by the FNODs issued to participants and indicates that, typically, a participant is affected by an 'unexpected life event' which results in an increase in the average overdue amount during the two months prior to the application for the CCF grant. After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

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

Figure 7 also shows the increase in overdue amount in the two months prior to the grant month. It was determined that a comparison of the average overdue amounts in months three and four prior to and after the 'Crisis Period' would provide better indication of the longer-term benefit of the CCF Pilot Program, as shown in Figure 7. 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~~ represents the May 2018 FNODs for the participants who received ~~the grant~~grants in February 2020, while G+21 represents the February 2020 FNODs for participants who received grants in May 2018, both of which ~~is~~ consist of 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.

Figure 9 Test and Control Disconnection Rate



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

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

form of a reduction in borrowing costs for delayed revenues. The magnitude of this impact is calculated as $143~~156~~ per year as follows:

- Reduced FNOD overdue amount by $28.66 per CCF grant recipient over two months;
- BC Hydro Weighted Average Cost of Debt of 3.74 per cent per year; and
- 6,385 grants over ~~22~~ 24 months.

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

6,385/~~22~~ 24 * ($28.66/2) * (3.74%/12) = $~~12.96~~11.88 per month,

or approximately $~~156~~ 143 per year.

3.8.5 Bad Debt Expense

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

As described in section 3.5.2, the matched control group had to be matched on account close date as well, to ensure that the matched control group had the same potential to end up in bad debt as the test group.

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

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	$143~~156~~ per year reduction in borrowing costs	Yes
Annual Benefit to BC Hydro ($)		143~~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.

benefit of approximately $143~~156~~ was identified for reduced borrowings from a reduction in delayed revenues.

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

5.3 Public Opinion

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

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