Appendix A: Literature Summary

Grounding Questionnaire Development in Academic Literature

The questionnaire development was grounded in and informed by academic literature. The article below is an academic literature review of recent developments in measuring stated preference. It identifies key elements that are necessary to include in a willingness to pay study.

Johnston, R. J. et al., 2017. Contemporary Guidance for Stated Preference Studies. *Journal of the Association of Environmental and Resource Economists*, 4(2).
Available at: https://aura.abdn.ac.uk/bitstream/handle/2164/10529/691697.pdf?sequence=1
[Accessed 4 November 2022]

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Scenario Development

Scenarios should clearly state…

1. The baseline (or status quo) conditions
2. Uncertainty in the baseline, if any
3. The mechanism of change
4. Uncertainty in the change being valued, if any
5. The change to be valued
6. The monetary amounts (i.e., choose cost or bid amount for range and spacing)
7. Binding payment to prevent free riding and ensure a consequential design (especially necessary for public goods)
8. Frequency of payment (e.g., annual or monthly)
9. Duration of payment (e.g., one time or annually for 5 years)
10. Method of payment (e.g., utility bill or income tax)
11. Who pays (e.g., household or individual)

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Value Elicitation

When it comes to value elicitation,…

12. Value should be elicited through a single binary-choice question for each respondent, generally (but not always) consisting of a baseline or status quo alternative versus the change being evaluated
    - Avoid classic open-ended questions (to ensure incentive compatible). Use has declined in recent years. The problem is that it often leads to high zeros and unrealistic high WTP responses.
13. "No-answer" option recommended in NOAA is optional since including or excluding it yields comparable results. Those who would choose the "no-answer" option answer "no" when the option is excluded
14. It should communicate decision rule (e.g. referendum vote when the use of a majority vote is a plausible decision mechanism, like for public good valuation)
15. The survey should include supporting questions to identify protest responses or other motivations for value elicitation responses (i.e., debriefing questions)
16. The survey should include supporting questions to identify demographic, household or other characteristics

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Application

Checklist	The draft questionnaire…	Questionnaire language
1. The baseline (or status quo) conditions	Includes past SAIDI and SAIFI metrics, not normalized (based on Reliability Indices included in BC Hydro's Fiscal 2023 to Fiscal 2025 Revenue Requirements Application)	*Between **2017 and 2021**, an average residential household in BC experienced about **2 outages per year**. Over the same period, an average residential household was without electricity for about **6 hours per year**. Outage data from 2022 is not yet available.*
2. Uncertainty in the baseline or change being valued	Includes a note of caution when interpreting the outage averages	*Keep in mind that these are system averages, and **your actual experience may be different**.*

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Application (cont.)

Checklist	The draft questionnaire…	Questionnaire language
3. The mechanism of change	Describes a hypothetically new program	*Suppose your electricity company **had a vote among their customers, including you**, to determine whether it should introduce a new reliability program to all their customers starting from next year. This program would reduce 2 outages per year to 1 and from experiencing a total of 6 hours without power to 3 hours.*
4. Uncertainty in the change being valued	Includes a note of caution when interpreting the improvements	*Keep in mind these are system averages, and your actual experience may be different. Some customers may experience even fewer and shorter outages with this program while others may experience more and longer outages than the average.*

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Application (cont.)

Checklist	The draft questionnaire…	Questionnaire language
5. The change to be valued	States an extra amount in all future bills	*This program would require all customers pay an increase of [RANDOM ASSIGNMENT: $5, $10, $15] on their electricity bill (which is typically paid every two months). Customers would continue paying [PIPE IN: $5, $10, $15] every two months in the future.*
6. The monetary amounts (i.e., choose cost or bid amount for range and spacing)	Randomly assigns respondents to respond to 3 increases (These increases are accessible and the dollar values are uniquely distinct from one another.)	
7. Binding payment to prevent free riding and ensure consequential design (especially necessary for public goods)	States the change as a mandatory increase	
8. Frequency of payment (e.g., annual or monthly)	States the charge would be paid every 2 months, which aligns with most payment frequencies in BC	
9. Duration of payment (e.g., one time or annually for 5 years)	States the program requires customers paying this increase in all future bills	
10. Method of payment (e.g., utility bill or income tax)	States the increase would appear their electricity bills	

Application (cont.)

Checklist	The draft questionnaire…	Questionnaire language
11. Who pays (e.g., household or individual)	Refers to the household in the responses	*Which of the following statements best represents you?* *I would vote for this program if it cost my household [PIPE IN $5, $10, $15]* *OR* *I would vote against paying more for this program* *OR* *I'm not sure*
12. A single binary-choice question for each respondent, generally (but not always) consisting of a baseline or status quo alternative versus the change being evaluated (avoid classic open-ended questions)	Provides two main options: for this program (i.e., change being evaluated) or against this program (i.e., baseline)	
13. "No-answer" option recommended in NOAA is optional since including or excluding it yields comparable results. Those who would choose the "no-answer" option answer "no" when the option is excluded	Includes an "no-answer" option	
14. Decision rule (e.g. referendum vote when the use of a majority vote is a plausible decision mechanism, like for public good valuation)	Frames the question as a majority vote	*Suppose your electricity company **had a vote among their customers**… If **a majority of customers** votes for this program, the increase would be applied to all customers starting from next year.*

Application (cont.)

Checklist	The draft questionnaire…	Questionnaire language
15. Through supporting questions to identify protest responses or other motivations for value elicitation responses (i.e., debriefing questions)	Includes debriefing questions	*Q: What are the reasons you had in mind when you said that?* *[Open-ended]* *Q: Thinking about the possible impact of the additional cost of [PIPE IN $5, $10, $15], which of the following statements is closest to you?* • *The cost has a major impact where we have to do without some things* • *The cost has an impact, but we are able to adjust without doing other things* • *The cost won't have a noticeable impact* • *Don't know* *Q: [ASKED IF THEY VOTE AGAINST THE PROGRAM OR ARE NOT SURE] Do you agree or disagree with the following statements?* • *I would like to avoid an outage like this, but I just can't afford to pay more for electricity.* • *I can afford to pay more for electricity, but the occasional outage doesn't really bother me.* • *I can afford to pay more for electricity, but I am concerned about the impact on people who are struggling financially.*
16. Through supporting questions to identify demographic, household or other characteristics	Include demographic questions	Primary energy source of home heating, household size, type of primary residence, education, household income, primary person responsible for paying utility bills, perception of price of electricity, bill impact on finances, and size of electricity bill