

BRITISH COLUMBIA UTILITIES COMMISSION
IN THE MATTER OF THE UTILITIES COMMISSION ACT
R.S.B.C. 1996, CHAPTER 473

And
British Columbia Hydro and Power Authority
Public Electric Vehicle Fast Charging Service Rates
Application

VANCOUVER, B.C.
July 28, 2021

STREAMLINED REVIEW PROCESS

BEFORE:

D.M. Morton,	Chair/ Panel Chair
A.K. Fung, Q.C.,	Commissioner
E.B. Lockhart,	Commissioner

VOLUME 2

APPEARANCES

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Leigha WORTH Kristin BARHAM	Counsel for British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Tenants Resource and Advisory Centre and Together Against Poverty (BCOAPO)
Gary GUTHRIE	Self
Don FLINTOFF	Self
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VANCOUVER, B.C.

July 28th, 2021

(PROCEEDINGS RESUMED AT 8:29 A.M.)

THE CHAIRPERSON: Please be seated.

BC HYDRO PANEL:

MARK SEONG, Resumed:

ANTHEA JUBB, Resumed:

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DEMETRIOUS JIM PAPADOULIS, Resumed:

THE CHAIRPERSON: Thank you and good morning all, and welcome back. Just before we start, I just would like to make sure that everyone that is attending remotely is able to hear me? Can you please answer so we can make sure we can hear you also.

Mr. Flintoff?

THE HEARING OFFICER: Can you repeat that?

THE CHAIRPERSON: Okay, just want to make sure that everyone is joining us remotely is able to see and hear us. I will start with Mr. Flintoff? Are you there? I assume you are trying to speak? Either that or you have a lot of birds around you.

Okay, let's move on then. Anyone from BCOAPO? Can you hear me?

MS. WORTH: Yes, Mr. Chair, and I can see an image of you on my screen, thank you.

THE CHAIRPERSON: Thank you. Mr. Oakley?

1 MR. OAKLEY: Yes, Mr. Chair, I can see you and hear
2 you.

3 THE CHAIRPERSON: Okay, so, Mr. Flintoff, can you say
4 something again please?

5 MR. FLINTOFF: Yeah, I am, okay.

6 THE CHAIRPERSON: Thank you.

7 MR. FLINTOFF: Thanks.

8 THE CHAIRPERSON: And Mr. Ambrosson?

9 MR. AMBROSSON: Yes, Mr. Chair, I'm here.

10 THE CHAIRPERSON: Okay, good, thank you. Okay, so
11 let's get started then. Thank you.

12 Mr. Coady, are there any preliminary
13 matters we need to look at?

14 MR. COADY: Yes, I understand that BC Hydro has a
15 submission, Mr. Chair, I'm not sure the details of it,
16 but he is going to start. And secondly, Mr. Manhas,
17 who was counsel for ChargePoint, couldn't join us
18 today, but Alex Baer, B-A-E-R will be here in his
19 place.

20 THE CHAIRPERSON: Thank you, and welcome, Mr. Baer,
21 thank you.

22 Mr. Christian, please?

23 MR. CHRISTIAN: Thank you, Mr. Chair. Two points, not
24 a submission really, just I wanted to advise the panel
25 that Mr. Papadoulis had an opportunity to review the
26 transcript last night and believes that he may have

1 left a misleading impression with respect to one of
2 the questions asked of him by Commissioner Fung. And
3 Mr. Simmons has a response to an undertaking that was
4 offered, that the panel offered to provide an answer
5 to today. So, he is ready to do that.

6 THE CHAIRPERSON: Okay, thank you. So, let's start
7 with Mr. Papadoulis.

8 MR. PAPADOULIS: A: Good morning. This is the
9 transcript page references of 203 and 204. This is in
10 regards to my testimony on the interconnection cost
11 discussion.

12 So, in essence, I'd like to make it clear
13 that interconnection costs are site specific where the
14 site is located relative to our distribution
15 infrastructure. But the interconnection costs are
16 also based on the size of the service requested. In
17 other words, if you have a site with many chargers,
18 the expected load will be larger and hence the
19 distribution system reinforcement will be more costly
20 than the same site with fewer chargers.

21 My testimony yesterday may have implied
22 that the interconnection costs are a flat rate, which
23 they are definitely not.

24 **Proceeding Time 8:33 a.m. T2**

25 Sorry, interconnection costs are
26 proportional to the costs of providing infrastructure

1 to serve the load requested by our customers. For
2 example, the size of a load may dictate a need to
3 increase feeder conductor size, add or replace poles,
4 build new duct bank, substation modifications and so
5 on. So I just wanted to make that clear.

6 COMMISSIONER FUNG: But I think the subsidiary point
7 that -- and I don't know whether it needs
8 clarification or not, is when you are calculating
9 interconnection costs is it per site or is it per
10 station?

11 MR. PAPADOULIS: A: It's per site.

12 COMMISSIONER FUNG: Okay, thank you.

13 MR. PAPADOULIS: A: But, again, proportional to the
14 load.

15 COMMISSIONER FUNG: Yeah, thank you.

16 THE CHAIRPERSON: Thank you very much, much
17 appreciated. Mr. Simmons.

18 MR. SIMMONS: A: Thank you. This is Greg Simmons here.
19 This is in response to a question I believe was posed
20 by ChargePoint yesterday. And the question was how
21 many sites or stations, direct current fast charging
22 stations, are there and public charging stations, that
23 currently exist in British Columbia. And so we've
24 done a check on PlugShare to see all the publicly
25 available stations. And that number, the total sites,
26 is 178 sites. We've excluded from that number the

1 fast charging stations that exist at some dealerships
2 around the province, because we're unsure of whether
3 or not those are publicly available, and if they are
4 when they're publicly available.

5 So that's sites. And the other side to
6 that question, I suspect, would be how many stations.
7 And we didn't count that up. It's actually a bit
8 difficult to do. But if one were to assume that, for
9 example, the Tesla stations, which have many times 16
10 or up to 24 charging ports, if we assume 12 for each
11 of those Tesla stations and the balance have two
12 chargers or stations per site then that gives us a
13 total of about 576 charging posts or charging stations
14 in the province currently.

15 THE CHAIRPERSON: Thank you, Mr. Simmons, appreciate
16 it.

17 Okay, so if there's nothing else, Mr.
18 Weafer, I think we left off with you last night.

19 **CROSS-EXAMINATION BY MR. C. WEAFER (Continued):**

20 MR. C. WEAFER: Q: Good morning Chair, members of the
21 Commission and good morning BC Hydro panel. (audio
22 drops) follow-up from yesterday, follow-up on the
23 questions from our Exhibit C6-4. I've got a couple of
24 references to the transcript yesterday that we'll go
25 to that I want to ask questions and then I have a
26 couple of cleanup questions. So it shouldn't be long

1 but that's the process for this morning.

2 So, turning to the follow-up from
3 yesterday, the context was basically get a handle on
4 (audio drops) with respect to what's been described by
5 BC Hydro at page 31 of its application, the full cost
6 of service model that we had. So, toing and froing of
7 various items that may be in that model. Have you had
8 any opportunity to come with any further detail on
9 that?

10 MS. JUBB: A: We have. Yes, we have. So, I'll speak
11 to that now and then my colleague, Mr. Seong, will
12 walk through the numbers. We also have prepared a
13 table that provides the information and we'd like to
14 enter that as an exhibit in this proceeding. We do
15 have print copies here and I believe Hal is getting
16 (audio drops) but I'll get into the preamble in case
17 of those are still shortly to arrive.

18 I'd like to first address in the same part
19 of the discussion, Mr. Weafer, you were inquiring
20 about costs. There was also a question from
21 Commissioner Morton about when this question shows up
22 on page 224 of the transcript.

23 **Proceeding Time 8:37 a.m. T3**

24 (audio drops) about distribution in the system
25 reinforcements due to incremental load is that an
26 indirect cost that we've considered at all, and I

1 don't believe we gave a clear answer to that, so I'd
2 like to follow up on that today. And then we'll
3 continue with the rest of the costs we discussed
4 yesterday.

5 So, first I'd like to note that the --

6 MR. C. WEAFFER: Q: Sorry, before we start, is that
7 exhibit available? Because that would be very
8 helpful, obviously, to follow the presentation. I
9 know it is short notice, but it is helpful if we have
10 it.

11 MS. JUBB: A: It's very helpful.

12 MR. CHRISTIAN: It is being made available as we speak.

13 MR. C. WEAFFER: Q: All right, so why don't we stand on
14 this topic to the end of my cross-examination and then
15 we can come back to that when we will have that in
16 front of us. Would that make sense?

17 MR. CHRISTIAN: I think that probably works. I guess,
18 I'm not clear exactly, I think Ms. Jubb's testimony
19 actually doesn't go specific to the table. Rather,
20 Mr. Seong's does. So, I think it might be helpful for
21 Ms. Jubb to finish, and then if there is questions
22 about the table, they would be Mr. Seong.

23 MR. C. WEAFFER: And we can wait for that until the end
24 of my cross. That's fine by me if that suits the
25 panel?

26 THE CHAIRPERSON: That's fine.

1 MR. C. WEAFFER: I'm happy either -- yeah.

2 THE CHAIRPERSON: Whatever works for both parties is
3 fine.

4 MR. C. WEAFFER: Yeah, I'm happy either way. Sorry to
5 interrupt you, I didn't mean to.

6 MS. JUBB: A: Thank you. Okay, so, to reiterate, there
7 was the question from the Chair about the treatment of
8 distribution system reinforcements due to increased
9 load, and is that an indirect cost that we have
10 considered, and the question was on page 224 and 225
11 of yesterday's transcript. We didn't give a clear
12 answer to that, so I'd like to spend a few minutes
13 just talking about how those costs show up.

14 And I'm going to go now to table 3 of our
15 application, on page 31. So, any historic costs that
16 are associated with running the distribution system,
17 to the extent that those historic costs were incurred
18 in F22 and allocated to the MGS rate class, they are
19 captured in the electricity costs under Scenario 1.
20 The Scenario 1 electricity costs captured the tariff-
21 based cost of Energy and Demand, which encompasses all
22 of BC Hydro's costs of service for the medium general
23 service group. So, to the extent that there were
24 system reinforcement costs in that historic period,
25 they would be within those numbers.

26 In addition, our -- so that's on a

1 backwards looking basis, and there is also I think an
2 interesting question about whether in future there
3 will be more such costs imposed as the service grows.

4 The evaluation that we'll do in future will
5 again look at all of the distribution. We would refer
6 to these system reinforcement costs as being within
7 distribution demand. So, the fully allocated costs of
8 service study will include all distribution demand
9 related cost in it. And it will be part of the costs
10 presented.

11 However, neither the backward looking costs
12 of electricity, which is what we see on Scenario 1 of
13 table 3 of page 31, nor the fully allocated cost of
14 service study to inform the evaluation, would
15 separately itemize system reinforcement costs. They
16 are not separately itemized as part of that analytical
17 process. If there is interest in them being
18 separately itemized, those costs being separately
19 itemized as part of the evaluation in future, it's
20 something we can certainly turn our minds to and see
21 if we can include in that report.

22 THE CHAIRPERSON: So, do I understand you to be saying
23 then that those costs, any system upgrade costs and so
24 on, are included in the costs of EV charging to the
25 extent that those costs are included in the underlying
26 cost of electricity? Or the cost of the underlying

1 electricity, and you know, to the extent that those
2 estimates are part of the forecast for electricity
3 prices, then yes they are included, is that
4 essentially what you're saying?

5 MS. JUBB: A: With the exception that the electricity
6 costs presented in our application are based on F22
7 costs.

8 **Proceeding Time 8:42 a.m. T4**

9 THE CHAIRPERSON: Right, right.

10 MS. JUBB: A: So, in that respect--

11 THE CHAIRPERSON: Understood.

12 MS. JUBB: A: -- they're not really a forecast, they're
13 --

14 THE CHAIRPERSON: They're historical --

15 MS. JUBB: A: Yes, that's right. So, it doesn't
16 include -- our application doesn't depict any
17 forecasts of what those costs may be going forward.
18 To the extent they existed in F22, they are captured
19 in the electricity cost column.

20 THE CHAIRPERSON: Right. Okay, but it's not -- but as
21 you point out though, there is no explicit analysis of
22 incremental costs?

23 MS. JUBB: A: It's not -- the costs, the fully
24 allocated costs of service approach and the
25 electricity rates that are used in the table do not
26 separate out --

1 THE CHAIRPERSON: Right.

2 MS. JUBB: A: -- the marginal versus the fixed, as it
3 were, or the historic. It's an all-in analysis.

4 THE CHAIRPERSON: Yes. So, if I could draw an analogy
5 then, let's say to pick another cost category, let's
6 say, you know, maintenance costs of EV charging sites.
7 Let's say those maintenance costs were included in BC
8 Hydro's overall O&M maintenance budget, then those
9 costs would also be included in the underlying costs
10 of electricity?

11 MS. JUBB: A: That's right, that's correct.

12 THE CHAIRPERSON: And there wouldn't be an explicit,
13 and that as I understand is where Mr. Weafer is going.
14 Those costs are included in the overall maintenance
15 budget, and Mr. Weafer is asking for them to be broken
16 out. So --

17 MS. JUBB: A: That's correct. That's our understanding
18 as well. So, to the extent those costs were incurred
19 in F22, they are within the electricity cost column of

20 --

21 THE CHAIRPERSON: Right.

22 MS. JUBB: A: -- table 3. We understand there is
23 interest in those costs, and we have itemized them,
24 and we'll go through those costs now, and would note
25 that there is likely some double counting between that
26 itemization of costs and what is already shown in the

1 Scenario 1.

2 THE CHAIRPERSON: Understood. Okay, thank you.

3 MR. C. WEAFFER: Q: Thank you, that's helpful, I look
4 forward. Can I just ask this, and I may be going
5 further afield than I should, but I understand if an
6 EV fast charging service is at the 100 kilowatt hours
7 service, it's at the large general service rate, is
8 that correct?

9 MS. JUBB: A: Large general service applies to demand
10 above 150 kW, BC Hydro's 100 kW stations would be
11 associated with medium general service. Medium
12 general service is up to 150.

13 MR. C. WEAFFER: Q: And so if a competitor had multiple
14 stations, they may be over the 150? If they have
15 multiple stations at a site, they would potentially be
16 at the LGS rate, is that correct?

17 MS. JUBB: A: That's correct, as well as any other
18 associated loads at the site --

19 MR. C. WEAFFER: Q: Right.

20 MS. JUBB: A: -- that would contribute to the maximum
21 peak demand, that would determine the availability of
22 the rate schedule. So the total peak demand at the
23 site.

24 MR. C. WEAFFER: Q: So, their costs would have to
25 include the incremental demand associated with an LGS
26 rate? They would --

1 MS. JUBB: A: If they were --

2 MR. C. WEAFFER: Q: They would be having an incremental
3 -- in terms of the competitive market place, they
4 would be having an incremental cost above a site
5 that's at the MGS rate, if they're at the LGS rate,
6 because they've got a demand charge factored into the
7 cost?

8 MS. JUBB: A: On the MGS also has a demand charge.
9 Both MGS and LGS have a demand charge within them.
10 The LGS rate, though, does have a higher demand
11 charge. It also, though, has a lower energy charge,
12 whereas MGS relatively has a lower demand charge and a
13 higher energy charge.

14 MR. C. WEAFFER: Q: Thank you. And, so moving on, we'll
15 see the table and we'll come back to this topic, thank
16 you.

17 So the next on the list is just to go
18 through some of the outstanding items from our Exhibit
19 C6-4, and there has been discussion that some of this
20 has been covered, I just need to follow up with a few
21 areas that --

22 As I take it from the surveys that were
23 done with customers, and the nine interviews that were
24 done, there was no assessment of whether they were EV
25 owners or not. We just don't know what percentage
26 were electric vehicle owners, and what if any were

1 ratepayers who were not EV owners, is that correct?

2 There was no record kept to that?

3 MR. SIMMONS: A: This is Greg Simmons. That is
4 correct. There was no question that identified EV
5 owners specifically.

6 MR. C. WEAFFER: Q: And so go forward, given the
7 concerns arising in this proceeding around was the
8 non-EV Owner ratepayer perspective considered in terms
9 of that survey process, would BC Hydro be amenable to
10 in ensuring in future in surveys in this area that we
11 are looking at whether non-EV owners are being
12 surveyed and getting their views?

13 **Proceeding Time 8:47 a.m. T5**

14 MR. SIMMONS: A: Sorry, could you repeat that?

15 MR. C. WEAFFER: Q: In conducting surveys in the future
16 and around this topic ensuring that there is a
17 recognition and acknowledgement that you're surveying
18 ratepayers who may not be EV owners and may also have
19 interest in the topics that are being pursued by BC
20 Hydro in the surveys?

21 MR. SIMMONS: A: Yeah, we would definitely going
22 forward, I would like to see a question on whether or
23 not the respondent is an EV owner. However I would
24 not recommend a survey that is specifically to non-EV
25 owners.

26 MR. C. WEAFFER: Q: They would probably have a different

1 view than EV owners, you'd expect.

2 MR. SIMMONS: A: I think that they would have -- my own
3 personal opinion is they would have a confusing view
4 on pricing and the things that we're interested,
5 simply because they lack the context to answer the
6 questions. Having never driven an EV, they won't know
7 the difference and the overall and the absolute
8 implications of a rate of 21 cents versus 42 cents.
9 They just won't be able to gauge that in terms of how
10 much it costs to drive.

11 MR. C. WEAVER: Q: Right. But if they understood the
12 real costs and the costs of the subsidy that they may
13 be contributing to, they might have a view in those
14 surveys if that costing information is available?

15 MR. SIMMONS: A: Yeah, but the -- they could, but the
16 focus of the survey as we've done it is on the rate.
17 And that's --

18 MR. C. WEAVER: Q: Yes. But the rate inherently
19 involves a subsidy from the ratepayers as proposed by
20 BC Hydro, correct?

21 MR. SIMMONS: A: That's correct.

22 MR. C. WEAVER: Q: I think, and I'm sorry if I'm
23 jumping a bit but I'm trying to skip questions that
24 are not necessary. The proposal is, in March 2024, to
25 provide a preliminary result of station use data.
26 We're -- does BC Hydro intend to provide any of that

1 information before March 2024? Is there a process or
2 given the concerns arising in this proceeding in terms
3 of advising the Commission and stakeholders as to how
4 this is unfolding, is there any openness of BC Hydro
5 to report on a more timely basis with respect to
6 available information such as on 2022, 2021?

7 MS. JUBB: A: So, as we discussed yesterday in the
8 opening segment, BC Hydro's view is that the best use
9 of reporting and evaluation is to inform a rate
10 redesign, which we expect to be able to do by 2024, or
11 potentially earlier if there's the ability to
12 implement a rate design based on electricity, such as
13 if a new Measurement Canada standard is approved. So
14 we are working towards a March 2024 or earlier date
15 for reporting and evaluation.

16 For the reasons discussed yesterday, we're
17 not supportive of multiple reporting and evaluation
18 covering multiple different periods. We would be
19 amenable to moving the reporting date up, especially
20 if there is, for example, a Measurement Canada
21 approved meter. But we're not supportive of ongoing
22 monitoring, evaluation and reporting, for the reasons
23 described yesterday.

24 MR. C. WEAFFER: Q: If it's evident that the competitive
25 market is not responding, that we're not seeing a
26 response, and given the concerns that are being raised

1 in this proceeding, would that change BC Hydro's
2 perspective on reporting?

3 MS. JUBB: A: Can you just expand on what you mean by
4 "the competitive market"?

5 MR. C. WEAFFER: Q: If it's apparent early on in the
6 timeframe that the field is not as level as BC Hydro
7 is suggesting, that maybe you'll look at your
8 information that's coming in as to whether the rate is
9 affecting that?

10 **Proceeding Time 8:52 a.m. T6**

11 MS. JUBB: A: I think that we would look at if there
12 were factors at play such that we believe that
13 redesigning the rate would improve its performance
14 against Bonbright, which generally focuses on the
15 ratepayer view. And if we believed we could --
16 something had changed such that we could, for example,
17 increase revenue, reduce cross-subsidization, we would
18 come back early and report on that and apply for it.
19 That would be our motivation or trigger to come back
20 to the Commission ahead of 2024 and ask for a
21 redesign.

22 MR. C. WEAFFER: Q: So, the difficulty with that is, the
23 ratepayers are being asked to subsidize a rate which
24 purports to level the playing field. So the
25 ratepayers are bearing the risk and the cost of that,
26 and are basically accepting that's a public interest

1 objective through legislation that Hydro is trying to
2 pursue. If it's not happening, and the evidence from
3 the competitors -- is rate related, the ratepayers are
4 subsidizing something that isn't doing what it's
5 supposed to do. Could you comment on that?

6 MS. JUBB: A: Can I ask you to repeat the question?

7 MR. C. WEAFFER: Q: Sure. We're expecting BC Hydro's --
8 or are being told to accept BC Hydro's proposal, that
9 the Bonbright principles support ratepayers
10 subsidizing proposal, which is purported to be
11 leveling the playing field, or leveling the playing
12 field in terms of fast EV charging. If the evidence
13 is that's not occurred, the ratepayers are getting in
14 effect the worst of both worlds; a subsidy, and a
15 market effect that isn't occurring, which the subsidy
16 is supposed to assist. Is that more clear?

17 MS. JUBB: A: I think so.

18 MR. CHRISTIAN: While the witnesses are having a
19 conference, I think the exhibit is ready.

20 THE CHAIRPERSON: Great. And sorry, what is the
21 exhibit number again please?

22 MR. CHRISTIAN: I believe it's B-13? Is that right?

23 THE CHAIRPERSON: B-14?

24 MR. CHRISTIAN: B-14.

25 THE HEARING OFFICER: Marked Exhibit B-14.

26 (TWO CHARTS MARKED EXHIBIT B-14)

1 THE CHAIRPERSON: Thank you.

2 MR. C. WEAFFER: Q: We'll deal with the question first,
3 and then I have a question on the exhibit.

4 MS. JUBB: A: Okay. So, we've certainly considered
5 leveling the playing field, and that's reflected in
6 our application. However, it's not our primary
7 objective. Our primary objective is to set a rate
8 that can generate revenue to reduce cross-
9 subsidization to all ratepayers. And that is the way
10 that we would assess when we would come back to the
11 Commission to apply for a change. If we believe that
12 we could improve the performance of the rate such that
13 it could reduce cross-subsidization, that would
14 trigger us to come back to the Commission earlier than
15 2024.

16 MR. C. WEAFFER: Q: Thank you, that's fine.

17 MS. JUBB: A: Thank you.

18 MR. C. WEAFFER: Q: I just see B-14, and I don't have --
19 my eyes aren't good enough to process it this quickly,
20 but I just want to confirm in the scenarios whether
21 you've included or excluded the Enercan grants? Did
22 you hear the question?

23 MS. JUBB: A: I didn't, I'm sorry, can you repeat it?

24 MR. C. WEAFFER: Q: I'm sorry. I'm just looking at this
25 quickly, and I don't intent to cross-examine on this
26 exhibit in any detail, but I just off the top, would

1 just ask whether the Enercan grants towards capital
2 are assumed to have occurred or not in the proposed --
3 in the exhibit.

4 MS. JUBB: A: Okay. I would like to provide some
5 discussions of the information in the exhibit to help
6 with its interpretation.

7 THE CHAIRPERSON: Please.

8 MR. C. WEAFFER: Q: Could you just answer that question
9 first though?

10 MS. JUBB: A: The Ener- -- Mr. Seong?

11 MR. SEONG: A: Yes, so, there are two tables. This is
12 Mark Seong. The top table is the analysis or expanded
13 Table 3, with the inclusion of the contributions, and
14 then the second table is without the contributions.

15 MR. C. WEAFFER: Q: Thank you, I see that now, I just
16 couldn't read.

17 THE CHAIRPERSON: And the contributions include Enercan
18 an AMLI and (inaudible).

19 MR. SEONG: A: That's correct, all contributions. So,
20 for the top, the first table, it's capital cost of
21 85,000 including all contributions, and then the
22 bottom table is capital cost of \$235,000, excluding
23 all contributions.

24 THE CHAIRPERSON: Thank you.

25 MR. C. WEAFFER: Q: I see that now, thank you, I just
26 couldn't read it when I first saw it. So, please do

1 costs will be itemized in the F23 to F -- costs I'm
2 about to lists which are reflected in the table, will
3 be itemized and included in the F23 to F25 revenue
4 requirements application. So those who are more
5 interested in these costs, they will all be in our
6 upcoming revenue requirements application.

7 MR. C. WEAFFER: Q: Just to be clear, as part of the EV
8 charging costs or general costs?

9 MS. JUBB: A: My understanding is that they will be --
10 it might help if I run through what the costs are.
11 And my understanding is that they will be separately
12 itemized in the upcoming revenue requirements
13 application.

14 So, before I get to the list of costs,
15 we've discussed how there's likely some overlap with
16 what's already in the Table 3. And I expect that once
17 there's an opportunity to further absorb the exhibit
18 that we've just filed it will become apparent that the
19 separate itemization of these costs does not
20 materially change the rate that we expect we can
21 charge. So, as we discussed yesterday, our
22 application did not attempt to provide an exhausted
23 itemization of the costs.

24 Also, as I think I alluded to earlier, not
25 all of these costs are incremental, in that they won't
26 all drop to zero if the service were terminated. And

1 I'll attempt to identify the ones to the best of my
2 knowledge that are incremental and those that are not.
3 So, also, these costs are all operating costs not
4 capital, so depreciation is not relevant to them.

5 The first cost is customer service labour.
6 In our application we noted that -- the revenue
7 requirements application, and this shows up on page 30
8 of our fast charging rates application on line 5, it
9 mentions an \$800,000 labour cost. We estimate that of
10 the 800,000 labour approximately 480,000 may be
11 associated with fast charging.

12 Additional costs that may be associated
13 with fast charging are as follows. Distribution
14 planning labour, we estimate that approximately
15 170,000 of labour from the distribution line of
16 business may be associated with a service. Metering
17 labour, we estimate that approximately 150,000 of
18 labour for metering staff may be associated with a
19 service.

20 **Proceeding Time 9:02 a.m. T8**

21 Contact centre labour, we estimate that
22 200- -- approximately \$270,000 of contact centre staff
23 cost may be associated with the service. And non-
24 labour costs, we estimate these are approximately
25 \$280,000, including out of hours call centre support
26 at energy transactional fees

1 The total cost of the items listed is
2 approximately 1.35 million. Of this list, to the best
3 of my knowledge, caveating that I am not the cost
4 centre manager for all of these costs, to the best of
5 my knowledge only the non-labour cost and possibly the
6 contact centre labour would be considered incremental.
7 So the other costs, customer service labour,
8 distribution planning labour, metering labour, my
9 understanding is BC Hydro would incur those labour
10 costs even if the service were terminated.

11 THE CHAIRPERSON: Sorry, why would it incur the cost?
12 If it would incur the costs if this service were
13 terminated, then why is it a cost that's attributable
14 to this service?

15 MS. JUBB: A: If we had previously, and I believe in an
16 information request we may have described it as being
17 attributable. That is likely to strong a term. I
18 think it would be more reasonable to describe them as
19 being associated with a service, and --

20 MR. SIMMONS: A: This is Greg Simmons. Yesterday I
21 spoke about, I think it was later on in the day about
22 our customer metering team and our field services
23 representatives. So, they, on a regular basis
24 throughout their day, will visit charging stations and
25 inspect those. And that's reflected in the cost that
26 was identified here, about \$150,000 per year.

1 That was estimated as some extra driving
2 time that they do, and to actually deviate from their
3 meter reading route to the stations, and then it was
4 summed up over the year.

5 There were, to the best of my knowledge, no
6 additional field services representatives that were
7 hired to do this. It was -- essentially they were --
8 their duties were expanded to include this.

9 And similarly, in my group, there are
10 individuals that -- and including myself, that I
11 report to the Vice President Customer Service, I have
12 allocated to this number 25 percent of my time. I am
13 fairly certain that if these stations go away I would
14 be redeployed on other things like the electrification
15 plan and initiatives like that, that I continue to
16 work in this day. So, I'd like to characterize it as
17 the cardboard and the cornflakes. A lot of this is
18 done by trying to get more out of what we have within
19 the company.

20 THE CHAIRPERSON: Right, I don't want to debate the
21 point, but from my understanding of costs accounting
22 though, that still is a cost that is allocated to this
23 service, even if either someone has spare cycles, in
24 which case when those spare cycles are used up, that
25 will trigger the need to hire someone else, which will
26 then be an incremental cost. Or, whether somebody is

1 available to do, "special projects" and they spend
2 this year doing this project, and that year doing the
3 next project. Still, those costs are allocated to the
4 project that they're doing from a cost accounting
5 perspective, as I understand it at least. Would you
6 agree with that?

7 MR. SIMMONS: A: No, I would agree with that, and
8 that's indeed what we've done here, is we've allocated
9 that to the EV infrastructure file, these numbers.

10 THE CHAIRPERSON: Thank you.

11 **Proceeding Time 9:05 a.m. T9**

12 MS. JUBB: A: To continue, I'd like to clarify that the
13 list are those costs -- the list of costs are those
14 that we can reasonably quantify at this time, but it
15 does not include itemization of all of the shared or
16 indirect costs that will eventually be allocated to
17 this service through our fully allocated cost of
18 service study to be included in the evaluation. And
19 an example of a cost that might reasonably be
20 allocated to this service but that we're unable to do
21 so at this time are, for example, financing charges or
22 business support costs such as this hearing. So there
23 are indirect costs that we will be able to analyze and
24 allocate after the fact. And we will report out on
25 those costs.

26 I'd like to acknowledge the Table 3

1 itemizes -- the expanded Table 3 that we've entered as
2 an exhibit. Is there an exhibit number for the
3 transcript in terms of ease of reference yet?

4 COMMISSIONER FUNG: Exhibit B-14.

5 MS. JUBB: A: Thank you. Exhibit B-14 includes those
6 costs we've just discussed. And we've also added some
7 additional cost items that were requested in the
8 questions filed in advance of the SRP. We were asked,
9 for example, about the impact of considering the basic
10 charge, the electricity not dispensed to the vehicle,
11 so the losses we discussed yesterday, and capital
12 overhead. We've included all of those costs that have
13 been raised as being of interest in this Exhibit B-14.

14 MR. C. WEAFFER: Q: Can I just ask you a question? I
15 don't want to interrupt your flow, but when I look at
16 B-14 page 11, which I understand to be the reiteration
17 of what's on page 31 of your application, it's not an
18 expansion of it. Can you just help me understand
19 that? I think you said it's an expansion of what was
20 provided in the application. But if I look at page 11
21 I think it's -- the numbers track. Maybe so we can be
22 on the same page, which Exhibit -- are you referring
23 to the slide presentation when you say you've expanded
24 on what was on page 31 of the application?

25 MS. JUBB: A: The table that we've --

26 MR. C. WEAFFER: Q: I apologize. I thought you were

1 2023, '25 RRA, we actually went through that exercise,
2 which -- and then it became 480,000. So that's kind
3 of the evolution of the number. The 800,000 was a
4 gross number and then we thought, well, wait a minute,
5 this team isn't wholly directed to EV infrastructure.
6 So it wasn't that we were being flippant about 800,
7 you know, 480 or whatever, it was just sort of the
8 evolution of the analysis and kind of drilling down
9 and allocating these resources.

10 MR. C. WEAFFER: Q: And I'm just going by what you put
11 in the application. I see the 800,000, so can only
12 rely on it if you put it in front of us when you say
13 this is the full cost. And I don't even mean to argue
14 but I appreciate this, so let's move through, if you
15 don't mind, the details there.

16 COMMISSIONER FUNG: Sorry, Mr. Weafer, can I ask a
17 question just to your point about the \$480,000, Mr.
18 Simmons. Is that number reflected in the general O&M
19 that BC Hydro is seeking approval for in the RRA
20 that's coming up?

21 MR. SIMMONS: A: Yes, it would be.

22 COMMISSIONER FUNG: So it's not reflected in these
23 numbers here that you have in Exhibit B-14, that 480
24 is being asked to be paid for by all ratepayers of BC
25 Hydro?

26 MR. SIMMONS: A: I'll have to check that exhibit.

1 MR. SEONG: A: This is Mark Seong. For the labour
2 costs, it's actually been captured in the Scenario 4D
3 as part of the operational costs, it wasn't itemized
4 separately as a scenario. It's captured as part of
5 the \$1.35 million in the operation cost.

6 **Proceeding Time 9:13 a.m. T10**

7 COMMISSIONER FUNG: Which is already factored into in
8 the current rates being applied for in this
9 application, is that correct? Or is this something
10 that's now you're saying -- if you were to look at
11 full costs of service, this is what you would add to
12 it?

13 MS. JUBB: A: I'm not sure that we would add, if we
14 were doing full cost of service. And the reason -- in
15 fact, I don't believe we would add -- we certainly
16 wouldn't add the 800,000. And the reason being that
17 the electricity costs that are shown in Table 3 in
18 that Scenario 1, already include, reflect, costs that
19 were incurred last year. So, these labour costs
20 existed last year, so they're reflected in that
21 number. But the allocation was likely imprecise. It
22 was most certainly imprecise. It likely wasn't
23 appropriately allocated. It wasn't allocated to this
24 service at all. So, the exercise of allocating it to
25 the service, looking at the costs and allocating them
26 appropriately, is yet to come.

1 COMMISSIONER FUNG: Okay, thank you.

2 THE CHAIRPERSON: Ms. Jubb, I'd just like to clarify.

3 When you say that those costs are included in the
4 electricity cost, it's not the whole cost that's
5 actually included in the electricity cost -- to say,
6 to pick 800,000. If that's included in the revenue
7 requirement, that is spread across everybody's
8 electricity cost. Your electricity cost at your
9 house, and my cost at my house, and so on.

10 So, of that, the 800,000 is not showing up
11 in the electricity cost that's borne by the EV
12 charging station. Just a proportion of that 800,000
13 is in there. A very small proportion actually,
14 because this represents very proportionately small
15 amounts of electricity.

16 MS. JUBB: A: The proportion would be based on the
17 medium general service rate class.

18 THE CHAIRPERSON: Right.

19 MS. JUBB: A: Which is, by memory -- if you bear with
20 me, I'll get the number.

21 THE CHAIRPERSON: I'm just concerned that we are using
22 terms somewhat imprecisely here I think. And by
23 saying that this 800,000, again, maybe not the right
24 number itself, but to say this \$800,000 is included in
25 the electricity cost, it's not correct quite frankly.
26 A portion of the \$800,000 is included in the

1 electricity cost, but the other portions of it are
2 included in the electricity costs that other
3 ratepayers pay in this class, and maybe my example the
4 residential example was incorrect. But in whatever
5 the ratepayers in that class are paying it.

6 MS. JUBB: A: We agree that the allocation of the
7 labour will not be correct in terms of being
8 appropriately allocated to fast charging service. The
9 800,000 will have been allocated based on its
10 allocation to medium general service --

11 THE CHAIRPERSON: Exactly.

12 MS. JUBB: A: -- and medium general service accounts
13 for 393 million out of 5 billion. So, it's not
14 insignificant, but it is not the appropriate
15 allocation that would be done through a fully
16 allocated cost of service study.

17 THE CHAIRPERSON: And the EV chargers represent a small
18 proportion of the general service customers.

19 MS. JUBB: A: They do.

20 THE CHAIRPERSON: So, even if the 800,000 is only
21 allocated to the general service customers, it's still
22 only a very, very small portion of that 800,000 that
23 ends up showing up in the rates for EV sites.

24 MS. JUBB: A: That's correct.

25 THE CHAIRPERSON: So, to say that these costs are
26 double counted because they're embedded in the

1 electricity cost, while not incorrect, is not as
2 precise as may be required for this discussion, would
3 you agree with that?

4 MS. JUBB: A: I would agree that it's not as precise as
5 we would like to have. And we would ideally like to
6 have, and will have, that allocation of all of those
7 indirect costs for this service.

8 THE CHAIRPERSON: Right.

9 MS. JUBB: A: That would be helpful to have, and that
10 is our plan to produce it.

11 THE CHAIRPERSON: Thank you.

12 MS. JUBB: A: Thank you.

13 MR. C. WEAFFER: Q: Does the panel have anything else to
14 say about the exhibit? Because comfortable to move on
15 at this point?

16 THE CHAIRPERSON: Okay.

17 MR. SEONG: A: This is Mark Seong. If I could just
18 make one clarification on the table, if you look at
19 scenario 4A, which is the addition of the non-
20 dispensed energy cost, and as I mentioned yesterday,
21 that adds about .5 cents per minute.

22 **Proceeding Time 9:18 a.m. T11**

23 And you'll see that once you go down the column,
24 compared to Scenario 3, it doesn't change very much.
25 Same with scenario 4B as well, which includes the
26 basic charge, which is also .5 cents per minute. An

1 addition of those additional costs per minute is part
2 of rounding, and so some of the rows, for example 3.7
3 percent, it does not change from Scenario, 3 but some
4 of the other rows it does change by a penny or it may
5 go up by a penny, it might go up by two pennies
6 depending on which row you're looking at. But just
7 want to clarify that some rows do not change due to
8 rounding.

9 MR. C. WEAFFER: Q: Thank you, sir. And thank you for
10 the effort last night to produce the graph. The
11 discussion's been very helpful to the CEC.

12 I would like to move to a brief discussion
13 on depreciation rates. And I just, I want to put the
14 panel what the Commission said in the fiscal 2022
15 decision in regard to the proposed depreciation rates.
16 And I'm just going to quote from the decision at page
17 104, order G-187-21. And I'm going to juxtaposition
18 that to a comment made on the transcript yesterday,
19 page 139 by Mr. Papadoulis.

20 So the quote from the Commission:

21 "Given that this revenue requirement was
22 reviewed in a streamlined manner and BC
23 Hydro did not request approval of its
24 depreciation rates for EV charging stations
25 until after the review session, the
26 appropriateness of the proposed depreciation
 rates and any alternatives could not be

1 sufficiently examined. This panel is
2 particularly concerned with the impact of
3 potential advances in EV technology on the
4 useful life of BC Hydro's charging stations.
5 The panel is not persuaded that depreciation
6 rates based on manufacturer recommendations
7 take technological obsolescence into
8 consideration and therefore may be
9 optimistic."

10 So, just taking that comment from the last
11 panel, and Mr. Papadoulis, at page 139, line 25,
12 "BC Hydro has well developed approaches to
13 managing asset risk. From an asset
14 management strategy perspective, our current
15 installed asset base of our 50-kilowatt
16 chargers has an average age of two years,
17 and 68 percent are between one and four
18 years. We expect to run our chargers to the
19 end of their useful life, and premature
20 replacement of 50 kilowatt chargers is not
21 planned."

22 So my question is just in terms of the risk
23 management of BC Hydro on this project and those
24 chargers, is there a study or business plan that
25 describes your assessment? Particularly in the
26 context of the Commission's concern, which I
 appreciate was raised recently but clearly is a wide

1 spread concern around those chargers. Is there a
2 document or a business plan that sets out BC Hydro's
3 assessment of those chargers?

4 MR. PAPADOULIS: A: I'm not sure I fully understand
5 your question. So you want to know if there's a
6 document --

7 MR. C. WEAFFER: Q: Well, let me rephrase it, sorry. I
8 put two quotes to you so I don't mean to confuse you
9 in any way. But what I'm hearing in your comment is
10 that you've got well developed approaches to managing
11 asset risk. The Commission, the prior panel,
12 identified specific concern of asset risk with respect
13 to these chargers. So has there been an assessment of
14 that by BC Hydro as part of its business plan for the
15 fast charging application?

16 MR. PAPADOULIS: A: So, is your question in the context
17 of the pending depreciation study?

18 MR. C. WEAFFER: Q: No, the question is what have you
19 done now in terms of assessing the risk associated
20 with those assets? Which the Commission has heard
21 evidence on in this proceeding from other competitors
22 in the business. So I'm trying to understand how --
23 what analysis occurred for BC Hydro to arrive at its
24 conclusion such that ratepayers can feel comfortable
25 that there's not a risk of stranded assets with
26 respect to those chargers.

1 MR. PAPADOULIS: A: There seems to be multiple layers
2 of question here and I'm not sure I can --

3 MR. C. WEAVER: Q: I'm happy to see you parse it out as
4 you wish, I'm comfortable with that.

5 **Proceeding Time 9:23 a.m. T12**

6 MR. PAPADOULIS: A: So, my comment pertaining to, you
7 know, asset risk was not just specifically to EV
8 chargers, it was in general, right? For asset
9 management practices.

10 MR. C. WEAVER: Q: So just to help you there, that's
11 exactly what I'm asking. What did you specifically
12 do? I understand your overall position as a company,
13 and your asset management risk management. What I'm
14 trying to understand is specifically -- and the unique
15 nature of this process is that we've got competitors
16 out there looking, and the ratepayers are going to be
17 asked to subsidize that competitive situation. So,
18 what I'm trying to understand from a ratepayer's
19 perspective is how did you assess this risk, which is
20 clearly evident in terms of folks looking at this
21 business?

22 MR. PAPADOULIS: A: Right. So, applying, as I said
23 yesterday, our asset management principles, we'll look
24 at performance data, reliability data, what -- the
25 frequency of repairs and so on. And we'll make asset
26 management decisions on the disposition of particular

1 assets. And the case of these chargers, you know,
2 through the help of Mr. Simmons' group, we have data
3 and analytics to understand how the asset was
4 performing, and if we see that a particular set or
5 subset of the asset isn't performing well, then we'll
6 take evasive action and repair/replace or so-forth.
7 Right? So that's kind of the general asset management
8 principles that we're applying.

9 MR. C. WEAFFER: Q: So, is there a document or a study,
10 or piece of evidence on the record that sort of
11 verifies that that analysis is occurring? And
12 particularly in response to the Commission decision
13 which identified a concern on that topic?

14 MR. PAPADOULIS: A: So, just to answer one of your
15 questions, do we have a formal report or study. No,
16 we don't. But I would point you to BCOAPO IR 1.12.1,
17 where we did talk about our maintenance practices, and
18 you know, some of the analysis that we do.

19 MR. C. WEAFFER: Q: Okay, is there a document, is there
20 a business plan in terms of asset management risk with
21 respect to this project that's available that's not on
22 the record at this time?

23 MR. PAPADOULIS: A: I would say no.

24 MR. C. WEAFFER: Q: Thank you. We can move on, that's
25 fine. Another reference from the transcript,
26 different topic, and this is -- sorry.

1 **Proceeding Time 9:27 a.m. T13**

2 Ms. Jubb, I believe it was you speaking at
3 page 157 of the transcript, line 17 through 24.

4 "So on an individual basis, it's fairly
5 modest. However, collectively and when you
6 think of it across all ratepayers, that's
7 where I believe it becomes more material.
8 We do need to consider the impacts on all
9 ratepayers and our proposal considers those
10 impacts and the interests of all ratepayers
11 by aiming to propose a rate that will
12 maximize revenue recovery and reduce cross-
13 subsidization."

14 When you -- and I'm trying to do the math,
15 and I'm not very good at math, so, when you say
16 "material" where there is an average residential cost
17 of 5 cents per month, what's the number that's
18 material? At what threshold overall does BC Hydro see
19 as material? If 5 cents per month is not material, in
20 BC Hydro's view, and I'm not going to debate that, I
21 just want to understand when BC Hydro sees the issue
22 reaching a level of materiality, that they are
23 concerned around the cost to ratepayers, and the
24 magnitude of the overall subsidy as opposed to the
25 per-customer residential customer cost.

26 MS. JUBB: A: To clarify, the description that I
provided was that the impact is fairly modest. I

1 don't believe I used materiality threshold.

2 MR. C. WEAVER: Q: Well, at line 20 you use, "...that is
3 where I believe it becomes more material." So, I'm
4 looking for when do you -- what is the threshold? I
5 mean, "More material" must reach a point where it's
6 material.

7 MS. JUBB: A: And I would go back to describing the 5
8 cents a month as being fairly modest, which I did make
9 that description twice on that page. I don't have a
10 threshold of materiality, and I can't claim to speak
11 on behalf of what is material to an individual
12 customer. In my judgment, 5 cents per month is fairly
13 modest, but I can't claim to speak on behalf of every
14 customer what they would see as being material.

15 MR. C. WEAVER: Q: Right, and just so we're speaking on
16 the same topic, I'm not talking about the per-customer
17 now, I'm talking you've got an overall issue of when
18 is it material. When the overall across the customer
19 base, you've got a monthly cost which may or may not
20 be recovered. When is the subsidy too much?

21 MS. JUBB: A: I'm not sure I'm in a position to answer
22 that. When we look at costs of service based rate
23 design, we aim for revenue to be equal to cost, and
24 for there to be aspirationally no cross-subsidization.
25 That's not the framework that this application was
26 based on, and I'm not in a position to say what that

1 acceptable amount of cross-subsidization is.
2 MR. C. WEAFFER: Q: That's fine. The last question is
3 really tied into this topic, because I think your
4 answer is fair, in the sense of this is difficult to
5 find the balance between the level market and what is
6 fair for ratepayers to be paying to subsidize BC
7 Hydro's competitive position in the market, if that's
8 a position that could be taken. I'm not taking that
9 position, but I'm putting it out there as a
10 proposition.

11 Has BC Hydro made attempts -- and just to
12 preface the question, we get this is important. I
13 mean, we are concerned about the climate, we are
14 concerned about electric vehicle charging, we are
15 concerned about the market evolving properly, so we're
16 on the same page on that, just to be clear.

17 **Proceeding Time 9:32 a.m. T14**

18 Given that unique public policy objective,
19 and the pressure on Hydro to try and meet it, is Hydro
20 open to more of a consultation process with
21 competitors and stakeholders around looking at this
22 rate and dealing with the concerns that are being
23 raised about a level playing field and ratepayer
24 concerns about subsidies. Does BC Hydro see in
25 advance of a March 2024 report an ongoing -- an
26 opportunity for a process of consultation to try and

1 address the concerns that are arising in this process?
2 MS. JUBB: A: We certainly plan to include consultation
3 in advance of the March 2024 report, including both
4 customer research as well as broad consultation with
5 all interested parties. And we would -- we have
6 invited all interested parties to attend, including
7 other providers, and we would do so again and would be
8 willing to commit to a more active approach in terms
9 of inviting them to participate in that engagement
10 process.
11 MR. C. WEAVER: Q: Thank you. I think a concern that
12 comes across in reviewing the record is BC Hydro not
13 giving -- and I'm going to ask you to comment on this,
14 I'm not trying to make arguments here. I think I want
15 to be fair to give you an opportunity to comment.
16 There's been answers to IRs, and I'll speak general
17 here, in terms of BC Hydro not understanding the cost
18 models of competitors, not understanding the cost
19 models of FortisBC, not knowing how many station two
20 chargers there are in the province, which leads to a
21 high level of concern from a ratepayer group being
22 asked to subsidize the business model. That you may
23 not be getting this informed about the economics of
24 the market or the competitive nature of the market.
25 And given BC Hydro's generally not in a competitive
26 market and an environment, that raises a concern.

1 Could you comment on that?

2 MS. JUBB: A: I can confirm that in the context of this
3 application we did examine the prices of others, a
4 jurisdiction review of prices of other operators, and
5 reflect that in considering the level playing field
6 interests of the Commission. Our goal with this
7 application was focused on maximizing revenue to the
8 benefit of our ratepayers, and that was our primary
9 focus.

10 MR. C. WEAVER: Q: I understand that. And what I'm
11 putting to you in terms of recognizing this is not a
12 traditional market situation, given the backstopping
13 of BC Hydro by ratepayers, what we're trying to
14 understand is the ratepayers, who are in effect the
15 shareholders, were bearing the cost while the
16 competitor's shareholders bear the costs and don't
17 have a subsidy. We're trying to understand whether
18 there's a process that can be engaged with Hydro that
19 might assist in rates that recognize you're not a
20 typical private competitor and the ratepayers are
21 being asked to support the development of the market
22 and are hearing arguments that your rates are not
23 competitive.

24 So we're just -- we're trying to create a
25 process from here to improve it and understand whether
26 Hydro is open to that.

1 **Proceeding Time 9:36 a.m. T15**

2 So with that in mind, it is not just about
3 the ratepayer issue, we actually have a concern that
4 the market does unfold. Is Hydro open to that kind of
5 consultation? Including with the competitors?

6 MS. JUBB: A: We are open to new ideas and ideas about
7 how we might improve our rate designs. And we do get
8 those creative ideas through these processes. So, we
9 are open to suggestions on how to improve the rate
10 design and pricing going forward.

11 MR. C. WEAFFER: Q: And open consultation with
12 stakeholders and competitors?

13 MS. JUBB: A: We are open to consultation for sure.

14 MR. C. WEAFFER: Q: Okay, thank you very much, and I
15 appreciate your time, and appreciate the answers,
16 thank you. Those are my questions.

17 THE CHAIRPERSON: Thank you, Mr. Weafer, thank you.

18 Ms. Worth, are you all set?

19 **CROSS-EXAMINATION BY MS. WORTH:**

20 MS. WORTH: Q: Thank you, Mr. Chair, members of the
21 panel, BC Hydro panel.

22 I wanted to start today -- sorry, for the
23 record this is Leigha Worth, W-O-R-T-H, and I wanted
24 to start today by just following up on an exchange
25 that took place yesterday, and I have a transcript
26 reference, but I just recently kind of thought of it.

1 Late in the day, and there was an exchange
2 where -- during Mr. Weafer's questions where he was
3 posing to this panel questions that CEC had filed in
4 their pre-SRP exhibit, but that had not yet at that
5 point been addressed either by Exhibit B-12, or BC
6 Hydro's presentation earlier in the day.

7 And there was an exchange that resulted in
8 the B-14 that was filed today. And I wanted to follow
9 up on something. So Mr. Seong said that -- starting
10 on page 222 of the transcript I believe, line 14, that
11 he could bring the requested scenario numbers in and
12 provide them first thing. And that was the table, the
13 updated table that I believe was Exhibit B-14.

14 And then Ms. Jubb on page 223 said,
15 "So, we have completed -- this is Anthea.
16 We have completed the analysis as requested,
17 that looks at if the share of labour was
18 included in the scenario 3, and we can
19 provide that when we resume the hearing
20 tomorrow."

21 And I wanted to ask, Ms. Jubb, was your
22 response indicating that BC Hydro had actually already
23 completed the analysis that Mr. Weafer and his clients
24 had requested in that pre-filed SRP question when you
25 attended yesterday?

26 MS. JUBB: A: We did look at all of the questions that

1 were received in the advance of the SRP, and consider
2 how -- and consider them. Including the question from
3 CEC about -- I believe it was from CEC, I might have
4 the wrong reference, but the question about labour
5 costs? We looked at all the questions in advance of
6 the SRP and have thought them through. And we had
7 looked at that specific question and done that
8 analysis.

9 And I would reiterate, we are happy to talk
10 about any of those questions that came in in advance
11 of the SRP. We did our best to address them coming
12 out of the opening presentation, but there were a lot
13 of them, and we didn't get through them all.

14 MS. WORTH: Q: Okay, obviously there was the analysis
15 that Mr. Weafer's clients had requested and that he
16 had asked for in that document wasn't addressed, and
17 I'm just wondering if BC Hydro can offer explanation
18 as to why it didn't make any effort to provide that to
19 us prior to that, or in any other materials that it
20 may have completed prior to actually us engaging in
21 these questions, so that we could perhaps shorten the
22 hearing, and basically contribute to regulatory
23 efficiency, because I suspect that Mr. Weafer and some
24 time yesterday could have been avoided had BC Hydro
25 provided that analysis which you indicated today and
26 yesterday that it had already done?

1 THE CHAIRPERSON: Mr. Christian?

2 MR. CHRISTIAN: Yes, this is Jeff Christian. I'm going
3 to respond to the question, because it was really the
4 subject of the submissions that I made yesterday.

5 The fundamental tradeoff that BC Hydro
6 looked at after the SRP was established, and I forgot,
7 340 pre-SRP questions was, can it file all these
8 responses to all these questions in this -- in advance
9 of the SRP, and still be prepared for the SRP, bearing
10 in mind that part of the witnesses responsibility is
11 to have as much mastery of the record as they can.

12 **Proceeding Time 9:42 a.m. T16**

13 This is a proceeding with a very large
14 record already and the witnesses have to focus on
15 either getting ready for the proceeding or writing IR
16 responses. And so the approach that BC Hydro took was
17 to look at all the questions, but not file in pre-
18 advance, have reviews on scope that we articulated in
19 Exhibit B-11 well in advance of the SRP, and so it did
20 not come prepared to file answers in advance. The
21 difference between writing and answer down and filing
22 it in advance and being able to speak to it is
23 material in terms of time and effort.

24 As you heard yesterday, when Mr. Weafer did
25 ask questions, the witnesses largely are prepared to
26 respond to them. The scope ruling, of course, is only

1 made well into the start of the first day of this
2 three-day SRP. So that's the reason that BC Hydro did
3 not file in advance written answers to all the pre-SRP
4 questions.

5 THE CHAIRPERSON: Thank you, Mr. Christian, I
6 appreciate that.

7 Ms. Worth, hopefully that answers your
8 question.

9 MS. WORTH: I just need a moment to look at the exhibit
10 to see what aspect of Exhibit B-14 was affected by the
11 scoping question that Mr. Christian just referenced.
12 Because the capital cost contributions, I don't see
13 anything about depreciation, connection or demand
14 charges.

15 So I'm wondering if Mr. Christian can offer
16 some specific -- like, in this particular case there
17 may be -- like, I'm not suggesting that BC Hydro
18 should have responded to everything, I'm saying in
19 cases where BC Hydro had actually prepared materials
20 it's unclear to me why they didn't' actually provide
21 them ahead of time, even just as exhibits at the
22 beginning of the process so that we could look at them
23 over a break and perhaps edit our questions.

24 THE CHAIRPERSON: Mr. Christian?

25 MS. WORTH: I just think that that would be the sort of
26 the best effort towards our understanding while

1 respecting BC Hydro's desire for regulatory efficiency
2 as well as ours.

3 MR. CHRISTIAN: Yeah, so I think there's two points to
4 be made on that. Firstly, one is a reiteration of
5 what I spoke about yesterday. The depreciation rate
6 issue, connection charges and demand charges seem to
7 us to be avenues of interest that to pursue in this
8 SRP was going to compromise the SRP and wouldn't
9 materially assist the Commission in its responsibility
10 to set EV charging rates. Now, the Commission can
11 conclude otherwise and that's fine, and the witnesses
12 are here and we're here to respond to those questions.

13 In regard to the particular example of
14 Exhibit B-14, I think the implication of Ms. Worth's
15 submission is that this thing was sitting there ready
16 to go. That's clearly not the case. It was
17 additional questions asked by Mr. Weafer yesterday
18 that were follow up to things he had asked previously.
19 And so this analysis, the underpinning analysis was
20 ready, but actually creating the document was
21 something that the team worked on last night and early
22 this morning to do.

23 THE CHAIRPERSON: Thank you, Mr. Christian.

24 Ms. Worth, the panel is satisfied with the
25 answers we've got. And I think in the interests of
26 regulatory efficiency we should continue with your

1 other questions, please.

2 MS. WORTH: Yes. No, I just -- Mr. Christian just
3 provided the necessary piece of information for me to
4 understand why exactly that hadn't been done, so
5 that's certainly agreeable from my perspective as
6 well, thank you.

7 MS. WORTH: Q: Okay, thank you very much, panel. I
8 wanted to follow up and pose some of the questions
9 that we had that hadn't been responded to. And I'm
10 wondering, I'm referring to question 25.3. And if I
11 inadvertently plow some of the same ground that we
12 have in the presentation or anything, I apologize.
13 I've done my best to edit for what we've already done.

14 But this one referred to the response to
15 CEC 1.8.3. And we asked how BC Hydro assessed the
16 economics of the potential EV charging stations and at
17 what point the economics would have been deemed so
18 unfavourable, that deployment would not have
19 proceeded.

20 **Proceeding Time 9:46 a.m. T17**

21 Or was there a point where BC Hydro would have pulled
22 the plug, so to speak, if you'll forgive the pun?

23 MR. SIMMONS: A: Yeah, this is Greg Simmons. I'll
24 address that question.

25 So, our objective is to deploy stations on
26 major secondary and primary highways across the

1 province, that's the first objective, and then provide
2 charging opportunities in the urban/suburban locations
3 for others that don't have alternate ways of charging
4 their vehicle.

5 With respect to economic break even, we
6 don't look -- we don't do a break even analysis for
7 each station that we deploy. And the reason is pretty
8 evident, there currently isn't an economic break even
9 with these stations. And that's where the discussion
10 of cross-subsidization at this point comes in.

11 What we do look at, and as I talked about
12 yesterday, is we look at the specific locations of
13 these stations and the sites and we choose these sites
14 so that we minimize connection costs, and we choose
15 these sites that we find that they're close to
16 amenities, these attributes that customers value. And
17 so that we're confident or comfortable that we're
18 choosing these sites so that we'll maximize revenues,
19 we'll make the sites the most attractive within
20 boundaries, of course, of our budget. That they will
21 be well used and they're sited in areas that will be
22 used to the maximum potential.

23 So it's not a break even analysis, I would
24 look at it more of a usage maximization analysis
25 within the constraints of our deployment objectives,
26 which is placing stations in areas that may not very

1 well be busy at this particular time. There's a
2 certain localities -- locals in the north. You know,
3 I'm thinking of the Highway 16 corridor that, you
4 know, we want electrified. We're not seeing a really
5 heavy utilization of those stations yet.

6 THE CHAIRPERSON: Ms. Worth, there's something happened
7 to your sound. I think you're muted.

8 MS. WORTH: Sorry, I was trying to minimize the
9 distraction during the panel's testimony, I apologize.

10 MS. WORTH: Q: So, it's your testimony that there
11 actually wasn't a point where BC Hydro would have said
12 the economics just aren't there because that's not
13 actually how you looked at it. Instead, you looked at
14 how many of -- because you did provide that, sort of,
15 list of priorities that your engagement had identified
16 as attractive to potential users or to users. And
17 provided what you were considering ticked enough of
18 those boxes then BC Hydro would proceed, is that what
19 your testimony is?

20 MR. SIMMONS: A: Yeah, correct. And I can add to that
21 and say that there have been sites in the past that
22 we've identified that seemed to look very attractive
23 from a number of objective criteria but we've decided
24 not to deploy because connection costs would be too
25 great. And that's been the case. And I would say in
26 numerous instances connection costs have been the deal

1 breaker for us. So there is this eye on budget and
2 there's an eye on those types of factors.

3 We did deploy a station in Britton Creek,
4 which in our view for connectivity on highways is a
5 key strategic location. It's on the Coquihalla
6 Highway and it's a fairly strenuous stretch for
7 electric vehicles because of the elevation gain, the
8 battery tends to heat up and it can fool a lot of, at
9 least in the previous generations, on board computers
10 in the vehicles where people think they have enough
11 charge to get through that and they indeed don't.

12 The issue with the Britton Creek rest stop
13 station was getting power to that site and the
14 connection was very expensive. That kind of was a
15 deal breaker for BC Hydro. However the site hosts,
16 which is the Ministry of Transportation and
17 Infrastructure, provided funding for, I believe, it
18 was about 15 power poles that we needed to get the
19 power to that station, the three phase power to that
20 station.

21 **Proceeding Time 9:51 a.m. T18**

22 MS. WORTH: Q: Okay. So, with connection charge sort
23 of being the one economic metric that BC Hydro used,
24 was there a hard number? Or was there an analysis
25 that took place in order to come up with that?

26 MR. SIMMONS: A: Typically how the -- it comes into

1 play, and I kind of always characterize it is, you
2 have all these objectives, and then you have this
3 string wrapped around these objectives. And that
4 string is our budget, our overall budget. And so if
5 we have a deployment phase of say 15 sites and 25
6 stations, our deployment manager will be given a
7 budget, and that budget is approved through BC Hydro's
8 internal funding process. So, go out and estimate
9 what we think the costs are going to be, and that's
10 approved by BC Hydro executive, and our job is to
11 actually deploy and execute on that plan.

12 That project manager then will have to --
13 when we define and deploy the site, there is some
14 things that will have to -- like objectives that we'll
15 actually pull out on that string. But it may pull in
16 somewhere else. And so it's like that finance is a
17 string that binds everything together, and if you want
18 to pull out one way, it's going to bring in. And so
19 that's what really the deployment manager has to deal
20 with when deploying, and that's kind of the economic
21 tension that goes into or financial tension that goes
22 into our deployments.

23 MS. WORTH: Q: Okay, so it's almost like a salary cap
24 for the NHL. You know, they have a certain amount
25 that they have to spend on these things, and if they
26 want to bring in somebody who is really expensive then

1 there is going to be an impact at the other end, kind
2 of thing?

3 MR. SIMMONS: A: Yeah, that's a very good analogy, but
4 I would not want to compare our performance to say the
5 Vancouver Canucks over the last decade, so.

6 MS. WORTH: Q: No, and don't expect any more sports
7 analogies from me, I'm too much of a nerd to really be
8 able to do that kind of thing. So, I appreciate that
9 clarity.

10 Was there a minimum number of those sort of
11 qualitative conditions that needed to be satisfied in
12 order for BC Hydro to make that decision to proceed or
13 not? Or was it just sort of -- how does it affect
14 that overall -- the overall picture, which is the
15 budget and the number of stations and things that you
16 were supposed to achieve with it?

17 MR. SIMMONS: A: I wouldn't say there was a targeted
18 number. It is a bit subjective when we look at these
19 sites. And I would have to say too, another
20 constraint is the availability of sites. And being
21 able to find a willing site host, who will allow us to
22 deploy a station on their property, and get a lease
23 for 10 years.

24 MS. WORTH: Q: Okay, all right. So, my next question
25 is referring to BC Hydro's response to CEC IR 1.24.6,
26 in Exhibit B-1, page 32. And I'll read out the

1 question. I think it was your response actually, it
2 said,

3 "The application states that the utilization
4 was 15 percent when the service was free,"

5 And what year was that 15 percent based on, and do you
6 know how many EVs were on the road using the same
7 definition that BC Hydro used in that response to
8 CEC's IR in that year?

9 MR. SEONG: A: This is Mark Seong, and subject to
10 check, I believe it was F21. Fiscal 2021.

11 THE CHAIRPERSON: Fiscal 2021?

12 MS. WORTH: Q: Okay, thank you.

13 MR. SIMMONS: A: And the second part -- Greg Simmons
14 here. The second part of your question, I don't have
15 those figures on the number of electric vehicles on
16 the road throughout. I'm -- but I would, subject to
17 guess, we're about 57 now, I'd say there is, subject
18 to -- a bit of a guess, but say 45,000 electric
19 vehicles. 40 to 45,000 during that period.

20 MS. WORTH: Q: Thank you, I appreciate the effort to
21 make at least an estimate on that, I know it was sort
22 of out of the blue.

23 We've already dealt with the fact that
24 there is not an economic or cost of service basis for
25 BC Hydro's public EV charging rate. And that was sort
26 of the subject of some questions, including our pre-

1 SRP question 27.7 -- or sorry, 27.1, and then that
2 negates the need for 27.1.1, but I was wondering if
3 you could offer BC Hydro's view about the
4 considerations of EV adoption outweighing the need for
5 economic or cost of service basis for proposed rates.
6 And then if that is BC Hydro's position, why?

7 **Proceeding Time 9:57 a.m. T19**

8 MS. JUBB: A: This is Andrea Jubb. I'm going to
9 provide perspective not being a lawyer and I may rely
10 on my counsel to correct my interpretation of these
11 legal matters.

12 So my understanding as a manager
13 responsible for tariff and rate design is that rate
14 designs do need to have an economic or cost of service
15 basis, and that's been articulated by the Commission,
16 and particularly well, in their decision on the 2015
17 rate design application. And we have taken that to
18 heart in the designs of our rates.

19 Now, that is subject to relevant
20 legislation that the government may impose, and in
21 this case the *Greenhouse Gas Reductional Regulation* is
22 that relevant legislation.

23 So absent the *Greenhouse Gas Reductional*
24 *Regulation*, my view is that EV adoption on its own
25 could not outweigh an economic or cost of service
26 requirement. However, given that there is the

1 *Greenhouse Gas Reductional Regulation*, that is another
2 factor that we must consider in pricing and rate
3 design that is also in play.

4 MR. CHRISTIAN: Well, I have nothing to add. But Ms.
5 Worth, obviously, I was confident in Ms. Jubb's
6 ability to answer the question without wading into a
7 legal territory unnecessarily, but of course, I think
8 we are going to have a written argument phase in this
9 proceeding, so I think if you have any outstanding
10 issues arising from that line of inquiry, maybe just
11 put them on the record and we can deal with them in
12 written argument.

13 MS. WORTH: I wasn't expecting (inaudible).

14 COMMISSIONER FUNG: We can't hear you.

15 MS. WORTH: (inaudible) for Ms. Jubb or anything, I'm
16 just -- it was more sort of -- you know, but if
17 anything else, BC Hydro might be prioritizing there.
18 So I appreciate Ms. Jubb's willingness to stray
19 potentially out of her lane and Mr. Christian's
20 forbearance in sort of allowing her to do so. I think
21 she did a very good job.

22 MS. WORTH: Q: Okay, so just want to double-check that
23 I'm going to not -- based on -- because I do have a
24 copy now of Exhibit B-14. Okay.

25 So I'm going to be asking about the
26 question 31 that we filed, and I'm also taking into

1 consideration your responses regarding Mr. Weafer's
2 questions, which was regarding the 800,000 annual for
3 Hydro's EV related infrastructure labour costs.

4 So I just wanted to double-check. Is the
5 full \$800,000 of those expenses deferred to the
6 electric vehicle costs regulatory account? Or
7 whatever the actual figure is. I can't remember.

8 MR. CHRISTIAN: Mr. Chairman, I think actually Ms. Hill
9 here can advise -- or had advised me that the answer
10 is yes. And so it would normally be a question of the
11 witnesses but this is a -- as you know from Exhibit B-
12 11, our submission is this panel isn't terribly well-
13 versed in the regulatory accounting and financing
14 issues that have been raised by some of the IRs. So I
15 wouldn't normally answer a question that's asked in
16 evidentiary, but in this case I thought it would be
17 appropriate to just say yes.

18 THE CHAIRPERSON: Yes. Ms. Worth, is that good?

19 MS. WORTH: Q: Thank you. If there does -- I recognize
20 that there is this sort of constraint, and if there is
21 a point where I ask a question that the panel is not
22 prepared to answer, and that Ms. Hill isn't able to,
23 to sort of offer confirmation of through Mr.
24 Christian, that perhaps we could have that just sort
25 of through a brief undertaking or something like that.
26 If the panel is amenable.

Proceeding Time 10:02 a.m. T20

1
2 So, I'm wondering, because -- and this is
3 based on 31.2, because of Hydro's position that the
4 supporting electric vehicle fast charging
5 infrastructure implementation is only a portion of the
6 responsibilities that the customer service key
7 business unit that accounts for the \$800,000, if the
8 Panel directed BC Hydro to allocate an appropriate
9 portion of that to EV charging, what allocator would
10 BC Hydro use and what would be the result?

11 MS. JUBB: A: This is Anthea Jubb. The allocation, my
12 view is that the allocation of cost should be done
13 according to the allocation methods that have been
14 determined for our fully allocated cost of service
15 based on prior such proceedings where there have been
16 determinations on that methodology, starting from 2007
17 and there was another decision in 2016.

18 So those methods of allocation look at
19 factors such as the electricity sales. They also look
20 at the number of accounts. Those are the primary
21 methods of allocating operating costs. They'll also
22 look at the peak demand to allocate demand related
23 cost.

24 So there is an allocation methodology
25 that's been established. And for transparency and
26 consistency, we use that allocation methodology and

1 would want to use it as well here.

2 MS. WORTH: Q: Okay. And now we have Exhibit B-14,
3 which addresses the overhead. And I'm just wondering
4 if Exhibit B-14 in allocating the overhead, does that
5 actually include, sort of, immediate supervision or
6 more general corporate overheads? Or just more sort
7 of the four people that were referred to and various
8 other things like that? Or, sorry, that would be
9 included in the general labour costs. But I'm just
10 wondering about the overhead, does that include
11 immediate supervision or more general, sort of, up the
12 river kind of corporate supervision?

13 MR. SEONG: A: Hi, this is Mark Seong. For the capital
14 overhead cost, that includes things like upstream from
15 the meter, and this was in scenario 4C of Exhibit B-
16 14, and that was about 10 percent of the -- estimate
17 at 10 percent of the capital costs of 85,000. And so
18 10 percent would be about 8500 in a year.

19 MS. WORTH: Q: Okay. Thank you very much, Mr. Seong.
20 And I just wanted some quick confirmation,
21 so recognizing that the terms of contribution
22 agreements are confidential, I just wanted to know a
23 simple yes or no indication of whether the capital
24 costs for EV stations used in the application are net
25 of any contributions?

26 MS. JUBB: A: This is Anthea Jubb. I would direct

1 those who are interested to page 30 of the application
2 that describes the capital costs as being
3 approximately \$85,000 per year, net of third party
4 contributions. And it is that net of third party
5 contributions number that was used in Table 3 of the
6 application. And we have produced an expanded version
7 of Table 3, which we've filed as Exhibit B-14, which
8 looks at the number not including capital costs
9 contributions, which is the 235,000 reference on page
10 30. So both scenarios are now available.

11 MS. WORTH: Q: Thank you so much, Ms. Jubb.

12 So, in 35.1, our question 35.1, we asked,
13 you know, while increased rates would reduce -- or
14 it's Hydro's position, and of course sort of the
15 market reality, that while increased rates would
16 reduce station utilization, there is a point where
17 that reduced -- would BC Hydro agree that there is a
18 sort of sweet spot where that utilization may be
19 reduced, but due to the higher rates there may be no
20 corresponding reduction in revenues. And I guess sort
21 of I will wait to see what BC Hydro's position on that
22 is before I go on with my follow up

23 **Proceeding Time 10:08 a.m. T21**

24 MS. JUBB: A: As we discussed in the opening
25 presentation yesterday, we don't know exactly what
26 that price point is such that revenues would be

1 negatively impacted. Our judgment is that the range
2 of 17 to 25 cents per minute captures the point of
3 revenue maximization. We don't have the data required
4 to identify that true revenue maximizing rate at this
5 time. It's our judgment that it falls between 17 and
6 25 cents per minute.

7 MS. WORTH: Q: Okay, thank you.

8 MR. SIMMONS: A: This is Greg Simmons. I'd just like
9 to add to that, and based on our jurisdictional review
10 of the other prices that customers can -- and can see
11 on the EV charging market is, is that the further you
12 go away from 21 cents to, you know, towards 17 cents
13 or to 25 cents, I think the less confidence we have
14 that we're not going to reduce revenues. And so it's
15 almost like a normal distribution is you kind of think
16 it's in this range, but the further you go out from
17 there, it becomes less of a possibility that you're
18 going to maintain revenues with this price change.

19 MS. WORTH: Q: Okay. But presumably that will be what
20 BC Hydro is shooting for when -- I'm saying sweet
21 spot, but Ms. Jubb is talking about revenue
22 maximization. So, they're actually equivalent, is
23 that correct?

24 MR. SIMMONS: A: I would say that -- well, it's your
25 interpretation how you want to define sweet spot, but
26 for us, it's that price that maximizes revenues,

1 because that's the price that will minimize cross-
2 subsidization from other ratepayers.

3 MS. WORTH: Q: Okay. Yes, okay, thank you. So,
4 question 37.2 in our pre-SRP questions, made reference
5 to FortisBC and their EV sales, and charging station
6 utilization forecast. They, in that they used a
7 percentage of their EV sales targets from the
8 Province's *Zero Emission Vehicles Act*, and forecast of
9 overall light vehicle sales each year. And so I was
10 wondering if BC Hydro considers Fortis' approach to
11 forecasting future charging station utilization rates
12 to be reasonable, and if not, why not?

13 MS. JUBB: A: I'd like to refer to our response to BCUC
14 IR 1.15.4, where we were asked about FortisBC's
15 approach. And first I'd like to reiterate that, BC
16 Hydro and FortisBC's applications should be assessed
17 on their own merits, and that we have taken a
18 different approach than FortisBC doesn't mean that we
19 disagree that their approach is appropriate for them.
20 So, I'm not able to provide a critique of FortisBC's
21 application.

22 I can say that in our case, we're not in a
23 position to be confident to develop a 10-year forecast
24 of utilization at this point. We've provided
25 testimony yesterday and I can say again, we don't know
26 how quickly utilization will grow, or when it will

1 reach the point of full cost recovery. We plan to
2 certainly monitor it, and evaluate it, but we're not
3 in the position right now where we'd be confident
4 putting out a ten-year forecast of utilization.

5 MS. WORTH: Q: Well, I can certainly understand that.
6 I think there was an economist that testified once
7 before the B.C. Utilities Commission that said as an
8 economist when you're forecasting, you hope to at best
9 be wrong on the high side 50 percent of the time, and
10 wrong on the low side, 50 percent of the time, because
11 you're never ever accurate.

12 **Proceeding Time 10:13 a.m. T22**

13 So I'll move on. Okay. I'm just wondering
14 if we were to -- because BC Hydro has sort of said
15 that, you know, obviously you're hoping for the
16 program to be fully kind of self-funding and to not
17 have any cross-subsidization within a couple of years,
18 and I'm wondering if Hydro's planned March 2024 report
19 is going to use utilization data to confirm that the
20 rates as set and sort of toggled through the RRA are
21 going to provide -- or to show that they will provide
22 for full cost recovery or whether BC Hydro is going to
23 use that opportunity to propose a new rate design that
24 will provide for full cost recovery within that test
25 period or within sort of a reasonable timeline
26 afterwards. And if not, why not?

1 MS. JUBB: A: It is our aspiration that utilization
2 will reach the point by 2024 that we can submit a cost
3 of service based rate design that allows for full
4 cost recovery. There is some uncertainty about
5 whether or not that aspiration will be realized, but
6 is our aspiration. And utilization data would well be
7 an important input to that analysis and that
8 assessment.

9 MS. WORTH: Q: Okay. Would it be reasonable to, in the
10 interim, track the revenues and costs associated with
11 EV fast charging and then incorporate them into that
12 analysis?

13 MS. JUBB: A: My understanding is that EV costs and
14 revenues are tracked by and reported by BC Hydro in
15 the revenue requirements application, and I'm not an
16 expert in the revenue requirements application, but I
17 am aware of our compliance filing on the F22 revenue
18 requirements application and you can see there
19 reporting of costs. At that time there were no
20 revenues, but my understanding is that that
21 information will be reported through our revenue
22 requirements process for those who are interested.

23 MS. WORTH: Q: For the period in the interim. Okay,
24 thank you. I just wanted a confirmation of that.

25 Okay, so our question 41 in the pre-SRP
26 questions was following up on Exhibit B-5, BCOAPO IR

1 1.9.3 and 1.9.3.2 in which that last one was where BC
2 Hydro stated "The proposed rates are intended for
3 electric vehicle charging only and not for other
4 electricity end uses such as lighting." So it is BC
5 Hydro's view just sort of as a matter of principle
6 that the cost of electricity required for a project or
7 other ancillary equipment of any project, not just EV
8 charging sites, should not be charged to that
9 particular project?

10 MS. JUBB: A: I'm going to -- this is Anthea Jubb. I'm
11 going to return to the testimony from yesterday in the
12 opening presentation where I did attempt to address
13 this question but perhaps not with great clarity.

14 So it is our long-term objective that all
15 costs of service associated with the service would be
16 recovered in the rate design, and to the extent those
17 all costs include necessary expenditures, such as a
18 light for the station, the cost of the light, the
19 electricity to run that light, then those costs,
20 ideally and on a principle basis should be recovered
21 from the rate. And that would give you a full cost of
22 service rate.

23 MS. WORTH: Q: Okay. And is it -- you know, with
24 Hydro's view stated, in response to that IR, I'm just
25 wondering whether in the interim BC Hydro is actually
26 going to be tracking those costs, and how it's going

1 to be dealing with those costs, seeing how it's not --
2 its position is that it should not be charged to EV
3 station users at this point.

4 THE CHAIRPERSON: Ms. Worth, while they're talking, I
5 just wondered if you could let me know approximately
6 how much longer you have. I'm looking at a break here
7 at some point, but I'm happy to finish up if you are
8 going to be done sooner. If not we'll take a break
9 soon.

10 MS. WORTH: Q: Is the panel going to continue
11 conferring for a moment or --

12 MS. JUBB: A: We're ready to respond on that question.

13 MS. WORTH: Okay. If I could just have a moment to
14 review my questions to make sure -- if there's
15 anything else that I can dispose of.

16 THE CHAIRPERSON: It's okay. I'm not asking you to
17 rush through. Just an opportune time for a break is
18 all I need.

19 **Proceeding Time 10:19 a.m. T23**

20 MS. WORTH: I don't think it would be useful for us to
21 continue proceeding because I think I've got -- like
22 I've got a few more minutes here, probably like
23 another 10 or 15 minutes. So I think maybe a break
24 might be useful, and then that way too I can also go
25 through everything, make sure that --

26 THE CHAIRPERSON: Yes.

1 MS. WORTH: -- sort of winnow the way anything that
2 we've dealt with already as well.

3 THE CHAIRPERSON: Okay, so let's hear this answer --
4 shall we hear this answer and then we'll break?

5 MS. WORTH: Yes.

6 THE CHAIRPERSON: Thanks.

7 MS. JUBB: A: I can confirm that the study to be done
8 as part of the evaluation will examine and allocate
9 all the costs to the extent that our accounting
10 system provides that level of detail. So that cost
11 allocation exercise would include costs that are
12 reasonably allocated to this service, including the
13 example provided of energy not dispensed to the
14 charger.

15 And Mr. Seong would like -- for clarity Mr.
16 Seong would like to note where those costs are
17 currently shown up.

18 MR. SEONG: A: Thank you, Ms. Jubb.

19 It's shown in the Exhibit B-14 and the Scenario
20 4A, that shows the addition of energy not dispensed
21 cost, which equals to that .5 cents pre minute
22 addition.

23 MS. JUBB: A: Okay, and if I could expand on that,
24 because of rounding you don't actually see a
25 difference between Scenario 3 and Scenario 4A.

26 MR. SEONG: A: That's correct.

1 MS. JUBB: A: Because the impact is within rounding
2 error.

3 MS. WORTH: Q: Great, thank you.

4 That's my series of questions regarding that.
5 Is this a convenient place for a break, Mr. Chair, or
6 would you like me to continue on for another few
7 minutes?

8 THE CHAIRPERSON: Let's take a break now, please.

9 Thank you. We'll come back at 25 to 11:00, take 15
10 minutes. Thank you.

11 **(PROCEEDINGS ADJOURNED AT 10:21 A.M.)**

12 **(PROCEEDINGS RESUMED AT 11:22 A.M.)** **T24/T25**

13 THE CHAIRPERSON: Please be seated. Thank you.

14 Ms. Worth, are we ready to continue? We
15 have you back on full audio I hear.

16 MS. WORTH: Q: All right, thank you. I think what I'll
17 do is I will move on to (audio drops) point of
18 questioning. Okay. Let's see. I apologize, I'm just
19 realizing now that one of the things that I'd intended
20 to question about was -- ask questions about was not
21 something that remained outstanding. Okay.

22 Okay, I have a question, and this is 46
23 from our SRP questions -- so we are now at the end,
24 I've managed to eliminate a bunch of other follow-up
25 questions I had -- and that was regarding BC Hydro's
26 response to Strata Plan VR2673, 1.2.1, which stated

1 "the highest peak demand occurs during the daytime and
2 is equivalent to the charging station power level, for
3 example, the highest peak demand for 50 kilowatt
4 charging stations is approximately 50 kilowatts."

5 So does that response included any
6 allowance for the incremental load associated with
7 those lighting and other ancillary equipment at the
8 charging station sites?

9 MR. SEONG: A: Hi, this is Mark Seong. No, it does not
10 include either ancillary or day lighting services.

11 MS. WORTH: Q: Okay. And does BC Hydro have any -- to
12 the extent that there is any incremental ancillary
13 equipment, maybe not lighting during the day of
14 course, but other ancillary equipment or services that
15 are provided at a station, would there be a figure
16 that would -- that BC Hydro could provide that would
17 represent sort of the average incremental demand that
18 would be added to that site? Or is it just that there
19 would be nothing except for at night when there's a
20 need for lighting?

21 MR. SEONG: A: This is Mark Seong again. We don't have
22 the exact figures as to what that would be, but it
23 likely wouldn't be a coincident peak in terms of when
24 power -- when the station is being used by a vehicle
25 along with the lighting or other ancillary usage, but
26 we can analyze that on like a going forward basis. We

1 don't have that information at hand at the moment.
2 MS. WORTH: Q: Okay, thank you. And I'm afraid because
3 I had to reboot over the break I don't have -- I'm
4 just trying to open up Exhibit B-14, and I guess what
5 I'll do is I'll just sort of ask a quick question
6 about that. In Exhibit B-14, are the activities
7 carried out by external vendors or contractors ones
8 that are included in the costs that are shown there in
9 any of the scenarios, and if so, which ones?

10 MR. SEONG: A: It's Mark Seong again. Yes, that vendor
11 costs and such is part of \$208,000 that Ms. Jubb
12 mentioned earlier as part of the operation costs, and
13 that's rolled up in this Scenario 4D of the Exhibit B-
14 14.

15 MS. WORTH: Q: Okay. That's great.

16 **Proceeding Time 10:40 a.m. T26**

17 Thank you, those are all of my questions.
18 Thank you for your responsiveness today, I appreciate
19 it. Thank you.

20 THE CHAIRPERSON: Thank you, Ms. Worth.

21 Mr. Ambrosson from Residential Consumer
22 Group, are you there?

23 MR. AMBROSSON: Yes.

24 THE CHAIRPERSON: Do you have questions?

25 MR. AMBROSSON: Can you hear me there?

26 THE CHAIRPERSON: I can. Keith, are we good? Yes?

1 Great, thank you.

2 **CROSS-EXAMINATION BY MR. AMBROSSON:**

3 MR. AMBROSSON: Q: Okay, good morning. Yeah, this is
4 Fredrik Ambrosson speaking on behalf of RCIA. Yeah, I
5 have a few questions for BC Hydro that won't take too
6 long.

7 The first one being, since it got mandated
8 to do this and it's somewhat outside your core line of
9 business, have you considered to run an RP process to
10 outsource the installation and operation of the
11 charging stations with an objective to lowering costs?

12 MR. SIMMONS: A: This is Greg Simmons. I can say that
13 we have not initiated or undertaken an RFP process.
14 And the primary reason for that is I think BC Hydro
15 would be very reluctant to outsource something that is
16 so customer facing. This is an asset -- and very
17 unusual for BC Hydro in that respect in that it's
18 something that people touch and interact with
19 directly. And to outsource that to another entity
20 when it's BC Hydro's reputation at stake, it is just
21 not something that we have or would contemplate at
22 this time.

23 MR. AMBROSSON: Q: Okay. Yeah, thank you. Yeah, so my
24 second question ties into this a bit. So it looks
25 like competitors are able to recover its cost plus
26 potential profit for similar rates to what BC Hydro is

1 proposing. Which makes me conclude that BC Hydro's
2 costs are much higher because BC Hydro requires about
3 four times the proposed charged rates to recover its
4 costs.

5 So my question is, does BC Hydro have an
6 insight to as why the current all-in charger costs of
7 its competitors would be so much lower than BC Hydro's
8 costs?

9 MS. JUBB: A: So, this is Anthea Jubb. While we're not
10 experts in the operating costs of other providers, we
11 do note that Suncor in their response to questions in
12 this proceeding have indicated that they're unable to
13 recover their costs. And they've indicated that, for
14 example, in their response to BCUC question 2.2 of
15 Exhibit C20-10.

16 And also in the case of FortisBC there are
17 -- in the approach that they've taken where they've
18 looked at a ten-year average, there are years within
19 that long-term horizon where they do not expect to be
20 able to recover costs.

21 So it's my understanding that full-cost
22 recovery for fast charging service from the users of
23 the service is not occurring today.

24 MR. AMBROSSON: Q: Okay. Yeah, fair enough. Thank
25 you. So, I have another question. In your evaluation
26 process when doing the cost/benefit analysis on

1 meeting the government's needs or does BC Hydro want
2 to expand the program beyond the government's minimum
3 requirements?

4 MR. SIMMONS: A: This is Greg Simmons. Our deployment
5 plans are aligned and in accordance with the testimony
6 yesterday, with government expectations and objectives
7 with respect to deployment across the province and
8 allowing EVs. I would say that our scope and planning
9 thus far has been to limit our efforts in this to meet
10 those objectives and so I haven't -- I can say that
11 there hasn't been any efforts to expand our scope
12 beyond that. It's simply because the internal
13 budgeting processes within BC Hydro just don't allow
14 us. They are fairly restrictive and the company
15 continues and will be, as far as I'm concerned, very
16 cost conscious and there's capital rationing that
17 occurs in the company on an ongoing basis.

18 MR. AMBROSSON: Q: Okay. Fine, thank you, that was
19 good insight. Yeah, I don't have any further
20 questions actually. Yeah, thank you.

21 THE CHAIRPERSON: Thank you, Mr. Ambrosson.

22 Mr. Guthrie.

23 **CROSS-EXAMINATION BY MR. GUTHRIE:**

24 MR. GUTHRIE: Q: Good morning. My name is Gary
25 Guthrie. Thank you very much for your presentation
26 yesterday, I appreciate that.

1 At a fundamental level, what I've tried to
2 do, if this is to be a business, because there are two
3 fundamentals in business. You can maintain and
4 increase revenues or you can control and cut costs,
5 and I've tried to separate my questioning along those
6 two lines.

7 And I'd start first of all with costs. I
8 had a lot of questions about costs but Mr. Weafer has
9 asked most of those and you've answered them. My
10 question is for Ms. Jubb. Is it Hydro's intention to
11 produce a single document that records all the
12 information that's been shared verbally in terms of
13 all the costing, allocations, et cetera, et cetera,
14 necessary to support Scenario 5A and B? In other
15 words, I'm sitting back there scribbling numbers like
16 mad. They are spread all over pages and I'm still not
17 sure what the costs are.

18 As a side note, I should point out that
19 Hydro has brought new meaning to the term "full cost
20 of service". Thank you very much.

21 Ms. Jubb.

22 MS. JUBB: A: It is our intention, and we do believe
23 that it's most useable to have a single comprehensive
24 evaluation report that provides all the relevant
25 information on costs and other matters of interest,
26 and then that report is comprehensive and not -- I

1 gave the example yesterday of how things played out
2 for the freshet energy rate where we had four separate
3 reports covering different time periods, and we all
4 struggle to reconcile and interpret them.

5 **Proceeding Time 10:54 a.m. T28**

6 So, for this service, it is our position
7 that one single comprehensive evaluation report is
8 desirable. It's easier to understand and it provides
9 all the information in one place. So, that is our
10 view. That report takes time to prepare, and we are
11 proposing to file it no later than March 2024, earlier
12 if situations change such that we may be in a position
13 to improve the rate design.

14 In the meantime, and this is the other
15 avenue for this information, is our revenue
16 requirements application process. Our revenue
17 requirements application process being a separate
18 regulatory proceeding, where BC Hydro requests
19 approval of all of our costs every year. And that
20 proceeding itemizes all of the costs that BC Hydro
21 must incur in a year, and it will include electric
22 vehicle related costs.

23 MR. GUTHRIE: Q: As a follow up, is it not possible
24 right now given what we've heard today, for you to
25 write down on a piece of paper all these costs,
26 various allocations of overhead, 800,000, this

1 percentage? Like why do we have to wait to 2024 when
2 the information you've provided here verbally seems to
3 be public and available? Can we not write it down in
4 one document today or the next week?

5 MS. JUBB: A: So we do have, and I recognize it's yet
6 again in another document, and they're not always
7 tremendously accessible to read. We do -- I would
8 though point to our compliance filing in respect of
9 the F22 revenue requirements application, we filed it
10 on July 16th, it's publicly available. July 16th of
11 2021, and the Table 2-4, page 7, has the electric
12 vehicle costs, associated cost shown there. So those,
13 that information is reported out on as part of the
14 revenue requirements proceeding.

15 MR. GUTHRIE: Q: So, if I was to go to that document
16 and read down that page, I could justify or verify
17 that the numbers you've shown on this chart are all
18 included there?

19 MS. JUBB: A: What will be a challenge is the
20 allocation of costs, which we discussed this morning.
21 A precise allocation of cost to this particular fast
22 charging service has not been done. So the costs are
23 shown, but further to the exchange this morning, the
24 allocation is not precise. So, that will be the
25 challenge in terms of if one attempted to reconcile
26 the costs shown in the revenue requirements, which are

1 all in costs, and what we've been referring to as the
2 fully allocated cost, which really should look just at
3 those cost allocated to fast charging service.

4 MR. GUTHRIE: Q: And I guess I don't understand why we
5 can't allocate overhead. They call it a plan because
6 it's not real. It's the plan. And it seems to me
7 that you should be able to go through and look at
8 overheads and say a portion of this should apply,
9 whether it's 10 percent or 11 percent doesn't matter,
10 but as a ratepayer and an EV owner, I'd like to be
11 able to see what makes up all these numbers, and what
12 you're telling me is I can't.

13 MS. JUBB: A: What I'm asking for is patience, and that
14 we will be in a position to reveal that information
15 once we've calculated it. And what we can provide now
16 is essentially costs at a gross level, which is what
17 is in our revenue requirements application, and the
18 reason that I would ask for patience, and that it's
19 required for this process, is that in order to do a
20 precise allocation of costs, which is of interest I
21 think to all of us, the methodology that we do that by
22 requires as an input the kWh, for example, the energy
23 sales over the year. The peak demand that occurred in
24 the year, and all of that, we need to get through the
25 coming year to know what were the energy sales? What
26 was the peak demand?

1 a brand new service, which this is, is that it's
2 unlikely to be very reliable. Because it's a new
3 service, because we've just introduced a rate, we can
4 reasonably expect -- we don't have a good reason to
5 believe that a historic view will give a good
6 representation of cost on a go-forward basis, which is
7 why we haven't attempted to produce that forecast.

8 MR. GUTHRIE: Q: But if I may, that's exactly what your
9 competitors have to do. They have to sit down and
10 they have to say, how much revenue do you think we'll
11 have next year? And if you're going to compete in
12 that market, I would expect that you should have to do
13 the same.

14 You know, Suncor doesn't have the luxury of
15 saying, "Let's wait till next year to do this year's
16 plan." And I would hope that Hydro will start looking
17 at this more as a business and not as a rate
18 application where you're using -- you have to justify
19 to the Commission actual data, that you're looking at
20 this as part of a business planning process.

21 The next comment is, how long is my
22 patience? Is that 2024 or are we talking six months?

23 MS. JUBB: A: There will be reporting out, as I
24 mentioned, reporting out of cost through the revenue
25 requirements application. We are filing that at the
26 end of this month. So there's the update that was

1 provided in July, which looks at F22. And then at the
2 end of this month we'll be filing our F23 to F25 view,
3 so it will provide a forecast view for those forward
4 looking years. And that will be available at the end
5 of August. It will not have the precise allocation
6 that we've been discussing today.

7 To get to that precise allocation -- so it
8 will show the costs on a gross level. To get to that
9 precise allocation is going to need us to get through
10 the evaluation, which we are planning to file no later
11 than March of 2024.

12 MR. GUTHRIE: Q: I guess I'd better be patient.

13 Ms. Jubb, can you confirm what Mr. -- that
14 you agreed with Mr. Weafer's assertion that because of
15 the unique nature of the EV charging business that a
16 different approach needs to be used in the future?

17 MS. JUBB: A: I think I would certainly agree that
18 creative new ideas about rate design can arise from
19 these proceedings and from the input of our
20 interveners and other participants. And we're open
21 and interested in hearing those ideas, that could
22 improve our rate design going forward.

23 MR. GUTHRIE: Q: Okay. So, as I said, I had a bunch of
24 questions of cost which we'll let go. The next area
25 is revenue generation and it has two basic elements
26 too. It's the rate plus the volume. And before I get

1 to that I'd just like to ask Mr. Simmons a question.
2 This morning you pointed out that there are 570
3 charging posts, roughly, in the province. Isn't that
4 somewhat misleading in that not all the EVs can
5 connect to all 570 posts?

6 MR. SIMMONS: A: As I indicated, that does include the
7 Tesla, which are proprietary. But when we refer to
8 "post", that would include wither a CHAdEMO connector.
9 For the record that C-H-A-D-E-M-O, or a CCS connector.
10 We would define one post -- if it has two connectors,
11 it's capable of charging only a single vehicle at a
12 time.

13 MR. GUTHRIE: Q: So if I had -- of those one posts, if
14 it's got two connectors, it's still just one post.

15 **Proceeding Time 11:04 a.m. T30**

16 MR. SIMMONS: A: Assuming it can only charge one
17 vehicle at a time. If it's capable of charging two
18 vehicles at a time, then it would be two charging
19 posts.

20 MR. GUTHRIE: Q: And how many of your chargers can
21 charge two vehicles at a time?

22 MR. SIMMONS: A: None of them can.

23 MR. GUTHRIE: Q: Okay. Another question is, because
24 the only people producing CHAdEMO connectors are
25 Toyota and Honda basically now, what are Hydro's plans
26 to put more CCS connectors in and less CHAdEMO

1 connectors? Or does it matter? If two CCS guys show
2 up at a post, only one can charge.

3 MR. SIMMONS: A: Currently the charging infrastructure
4 that we're installing has two. They come with two.
5 So one 50 kilowatt unit or one 100 kilowatt unit
6 would, out of the factory, come with a CCS and an
7 CHAdeMO. So it's not an option on BC Hydro's part to
8 choose to delete one of those.

9 MR. GUTHRIE: Q: Okay. So my question is for Mr.
10 Simmons. Thank you for your presentation yesterday.
11 I found your chart very information, the usage chart,
12 where you showed the change in usage from April where
13 there was no price to the May and June. And in the
14 transcript from yesterday's meeting, on page 76, line
15 9 you said:

16 "... across the month would actually go up as
17 those individuals with the lower power
18 capable charging in their vehicles would
19 self-select away from the fast charging
20 because they are paying a higher rate."

21 That's what you said.

22 MR. SIMMONS: A: Yes.

23 MR. GUTHRIE: Q: I know a lot of EV owners and I'm not
24 sure they are that sophisticated. Could that just
25 have been the fact that more EVs are coming on with
26 higher charging capacities and this wasn't a selection

1 process at all? They showed up with a newer car that
2 can take more energy more quickly than an older car.

3 MR. SIMMONS: A: There is the possibility that was just
4 spurious. However, the increase was fairly
5 significant and held for those two months. And so
6 we'll continue to collect more data, but to me the
7 increase was a bit larger than we would expect from
8 that, and to think that in those couple of months
9 there was that many new vehicles that came on and
10 visited our stations, I think is less likely to assume
11 than in fact customers were self-selecting away from
12 the stations after the rate was introduced.

13 MR. GUTHRIE: Q: Okay. To help me understand this
14 chart, and I'm not sure if it's Mr. Simmons or Ms.
15 Jubb, you're proposing a 5 percent utilization rate,
16 is what you're basing your pricing on.

17 MS. JUBB: A: To clarify, we not proposing a 5 percent
18 utilization rate, rather we believe a reasonable range
19 of utilization likely falls between 3 to 5 percent.

20 MR. GUTHRIE: Q: Okay. And yet our current utilization
21 is almost 9 percent. Almost 10 percent. And we know
22 that EV sales are going to increase, so the more and
23 more cars coming on the market and more and more of
24 those cars are going to want to use your chargers.
25 I'm wondering why you've used such a low utilization
26 rate. Why not use a higher utilization when your own

1 data proves we already are higher?

2 MS. JUBB: A: We used the utilization rate estimate
3 provided by a third party research firm that's looked
4 closely at this matter and that is referenced in the
5 -- I'll provide you that reference in case you want to
6 go to it. The reference is provided in the footnote
7 of page 31 of the application and the study was the
8 Rocky Mountain Institute Report on DCFC Rate Design
9 for the Colorado Energy Office.

10 So we used the information from that study
11 as a reasonable estimate of the potential range of
12 utilization, recognizing there's uncertainty about
13 what it might be. We're very encouraged to have had
14 higher utilization than this range in the first two
15 months after implementing the rate. We don't know
16 whether those utilization levels will persist or not.
17 My understanding, and Mr. Simmons perhaps can correct
18 me if I'm wrong, is that we have two months of data
19 now?

20 **Proceeding Time 11:09 a.m. T31**

21 MR. SIMMONS: A: That's correct.

22 MR. GUTHRIE: Q: I guess my point is, because you're
23 looking at setting this up for three years, it seems
24 to me it would make more sense to target a higher
25 utilization rate, because the market is growing, and
26 your base is already growing, and if I look at your

1 chart, if we look at 10 percent in this column here,
2 26 cents is over under Scenario 2. In other words,
3 the 3 percent would be at 76 cents. Is that how this
4 chart works?

5 MS. JUBB: A: One clarification that I would provide on
6 this chart is that it makes no attempt to model the
7 relationship between price and usage. So, we're
8 unable to conclude that, you know, at the 10 percent
9 level that we would get that utilization level at a
10 price of 26 cents per minute. We don't know that if
11 the rate was increased from 21 to 26 cents per minute,
12 would we get 10 percent utilization? In fact, we may
13 be able to hypothesize that we wouldn't, because we've
14 seen utilization drop when the rate was introduced.

15 MR. GUTHRIE: Q: That's true, and then they also rose
16 the following month by one and a half percent. So,
17 your own data seems to imply that you had a large
18 chunk of price sensitive customers who left, and the
19 customers who stayed are growing. So, my point is
20 that -- I've seen -- we should look more at the
21 utilization as your base. If that's part of the
22 calculation volume, then maybe your volume estimates
23 are too low, especially for a three-year period, and
24 maybe they should be raised a bit, which would help
25 your competitors because you could raise the price of
26 your lowest utilization. Anyways.

1 MS. JUBB: A: Thank you.

2 MR. GUTHRIE: Q: Back to Mr. Simmons again. You
3 mentioned -- you've also both mentioned that it's very
4 difficult to predict future usage. Has Hydro made an
5 effort to link EV sales or ownership to usage? In a
6 perfect world it would be great if there was a linear
7 linkage. For every 100 vehicles, we get three or
8 something like that. But, has there been any attempt
9 to equate your usage to market conditions?

10 MR. SIMMONS: A: This is Greg Simmons. So I'm not
11 aware of any publicly available study that does that.
12 The -- and we haven't undertaken any study. However,
13 notionally, it makes a lot of sense that as the number
14 of electric vehicles on the roads grows, given a
15 certain supply of infrastructure that utilization will
16 go up. And we do expect that to occur. Will it be
17 proportional? I'm not sure. But it very well could
18 be.

19 The problems with trying to correlate the
20 two, and I go back to when I was in grad school and
21 economics and one of my economic metrics professors
22 said, is just stay away from time-series data, it's
23 really difficult to deal with, because things tend to
24 grow together. And you can always, always find
25 correlations between two growing numbers.

26 And so that's why when I think about it,

1 yeah, notionally, we're going to see them growing
2 together. To what extent that will occur, I'm not
3 really sure, but I suspect it's going to be a strong
4 correlation. And it should be a strong correlation in
5 the future.

6 MR. GUTHRIE: Q: It should be. Would this be something
7 Hydro would be interested in doing?

8 MR. SIMMONS: A: From my knowledge of those types of
9 studies, I don't think they'll be particularly
10 fruitful.

11 MR. GUTHRIE: Q: Okay. Part of the problem -- I've got
12 further questions for Ms. Jubb around the rate, but
13 part of the problem is is that, I don't believe EV
14 customers understand the rate. They pay at home based
15 on usage, and then they go to the machine and there is
16 a rate of 27 cents or 20 cents. I'm not sure they
17 understand that.

18 Have you calculated the costs of charging
19 of EV at home at say a 120 or 240 level compared that
20 to charging what it would cost to charge at your
21 station? In other words, I think an EV customer, if
22 you said it cost \$10 to do so many kilowatt hours at
23 home and \$12 to do it at a station, I think a customer
24 could understand that. Or if it was \$50 at a station.

25 But right now we're trying to ask people to
26 choose between variables. I pay this much at home,

1 and I pay a different amount on a different scale
2 through a charger.

3 **Proceeding Time 11:14 a.m. T32**

4 Have you done anything to try and equate
5 those at a high level?

6 MR. SEONG: A: This is Mark Seong. And we did do a
7 little bit of calculations, and based on residential
8 inclining block rate step 2 you're using our average
9 consumption data from our station from fiscal 2020, we
10 approximated that it would be just under \$2, \$1.85 for
11 residential customer charging at home. And then --

12 MR. GUTHRIE: Q: What volume is that?

13 MR. SEONG: A: I'm sorry?

14 MR. GUTHRIE: Q: What volume was that?

15 MR. SEONG: A: 13.1 kilowatt hours.

16 MR. GUTHRIE: Q: No, but the total price, how many
17 kilowatts?

18 MR. SEONG: A: I'm sorry?

19 MR. GUTHRIE: Q: The total price, how many kilowatts is
20 that?

21 MR. SEONG: A: It's \$1.85.

22 MR. GUTHRIE: Q: For one kilowatt hour?

23 MR. SEONG: A: It would be step 2 of the residential
24 inclining block rate, which is about, off the top of
25 my memory, about 14 cents per kilowatt hours. It's in
26 our electric chart if I can pull it up for you,

1 subject to check.

2 MR. GUTHRIE: Q: No, I'm just trying to understand --
3 I'm trying to get some to some common -- volume should
4 be the same in both your examples?

5 MR. SEONG: A: Correct.

6 MR. GUTHRIE: Q: Right.

7 MR. SEONG: A: So, for the EV fast charging stations we
8 are charging by time. And so in our -- the average
9 consumption that we used was, again, 13.1 kilowatt
10 hours would be dispensed in the average time of 28.6
11 minutes. Those two are averages, so they don't take
12 place simultaneously. They're actually independent of
13 each other because these are averages of all the
14 sessions that took place at all the charging stations
15 in a year. And so while that can happen, in that 28.6
16 minutes you may not -- not every vehicle may not get
17 13.1 kilowatt hours.

18 So with that caveat, we calculated what it
19 would take for customers to charge at our station
20 during that average time of 28.6 minutes, and that
21 comes out to about \$6.

22 MR. GUTHRIE: Q: About three times the price?

23 MR. SEONG: A: Yeah, that'd be roughly just over three
24 times, that's correct.

25 THE CHAIRPERSON: I'm sorry, is that the time of an --

26 MR. GUTHRIE: Q: I think there were several comments

1 received by the Commission where -- sorry.

2 THE CHAIRPERSON: Sorry, I just wanted to clarify for
3 my purposes. These numbers, \$1.85 versus \$6, that's
4 what the time for an average fill up, is that what --
5 so to speak, is that what that is?

6 MR. SEONG: A: Yes. It's the average consumption
7 figures that we've gathered from our data. So the
8 13.1 kilowatt hours, because the residential time
9 block is charged by kilowatt hour, so we can only use
10 that metric with the residential rate. Whereas with
11 our fast charging rate we can only charge by time. So
12 I had to use the other metric, which is the average
13 charging time that we've experienced in fiscal 2020.

14 THE CHAIRPERSON: I just wondered what are you getting
15 for a \$1.85, is that you get enough energy to fill up
16 your battery, is that what it is?

17 MR. SEONG: A: It's the average amount that we've seen
18 in terms of what customers are filling per session.

19 THE CHAIRPERSON: Okay, thank you. I'm sorry, go
20 ahead.

21 MR. SIMMONS: A: This is Greg Simmons. I think another
22 way to look at this and might be a bit clearer is
23 converting that per time price that we have on our
24 stations to per kilowatt hour. The one variable we
25 don't know is how fast the vehicle can charge, and we
26 talked about that yesterday what the capacity is. And

1 so our stations, most of them are 50 kilowatts. So
2 let's assume someone is driving a vehicle that can
3 charge at 50 kilowatts. Converting that, and 50
4 kilowatts throughout the entire session, converting
5 that to cost per kilowatt hour is about 25 cents. And
6 so that's in comparison with the 14 cents.

7 We see on average, say, in the order of 30
8 cents -- or, sorry, 30 kilowatts is the average
9 charging rate. That equates to 42 cents, which is
10 analogous to the three times, which Mr. Seong had
11 cited before.

12 Now, if you're in, you know, that area of
13 charging at 20 kilowatts, your vehicle is only capable
14 of charging at average 20 kilowatts during the
15 charging session, that per kilowatt rates goes up to
16 63 cents. And so there is quite a bit of variability
17 there in the cost per kilowatt hour based on the
18 capabilities of your vehicle.

19 And I indicated yesterday that we have
20 noticed that average power levels during a charging
21 session in kilowatts is actually increased since the
22 introduction of this rate, which I see as evidence of
23 self-selection. And it also is evidence that while
24 there are customers that really don't know about these
25 things, as you suggest, and certainly we've received
26 letters in that regard, I think there are a great

1 number of people that --, EV drivers, that do
2 understand this.

3 And potentially it's where we came from in
4 the market. If you look at the evolution of a market,
5 you start, what is it, innovators, then early
6 adopters, and then you move into early majority.

7 **Proceeding Time 11:19 a.m. T33**

8 Maybe as we get into the early majority we'll see more
9 confusion, but I do believe there is a great number of
10 EV owners out there that do understand this.

11 MR. GUTHRIE: Q: Yeah, and there were some comments
12 received by the Commission, E-46, D11-1, where their
13 calculations coincided with your calculations. And
14 what it says to me is that your 9.6 percent
15 utilization, your 14,000 visitors are people who are
16 willing to pay the higher price, and they may not have
17 options, they may be travelers. So that those numbers
18 are probably pretty solid, they're not 3 percent,
19 they're not 5 percent. So that was my question.

20 Ms. Jubb, back to you. The public workshop
21 highlights, page 16 of your presentation, against what
22 background information were participants given prior
23 to stating their preference for rates? In other
24 words, where did the 25 cents come from? Why wasn't
25 it 52 or 38? Like what was the context that was --

26 MS. JUBB: A: I will refer you to the workshop slides,

1 which can be found in --

2 MR. GUTHRIE: Q: Page 6 was the number I was looking
3 at.

4 MS. JUBB: A: In our application, the materials that
5 were presented in the workshop --

6 MR. GUTHRIE: Q: Oh, I thought you meant your
7 presentation, sorry.

8 MS. JUBB: A: The materials that BC Hydro presented in
9 the public rate design workshop are included in
10 Appendix E of the application. That's where you can
11 find the materials that were shared in that workshop,
12 and I'll go to the slides regarding pricing.

13 In that workshop we presented fairly
14 detailed results of the survey that we've discussed
15 these past two days about customer price sensitivity.
16 We also presented a summary of the jurisdiction review
17 of prices that showed the range of prices that others
18 are charging. And we presented a version of Table 3
19 of the application that we've been discussing right
20 now and we asked for input on pricing. We asked what
21 is the appropriate rate for the 50 kW charger and
22 provided a target range of between 20 and 25 cents per
23 minute based on the information that we had presented,
24 which was customer's willingness to pay and the
25 jurisdiction review of prices.

26 MR. GUTHRIE: Q: Okay.

1 MS. JUBB: A: And the respondents, the participants in
2 that workshop provided us their feedback based on
3 their own understanding and views and the information
4 we had shared.

5 MR. GUTHRIE: Q: It would have been nice if it had been
6 based on what it actually cost. Because Suncor tells
7 us their price is not sufficient to maintain their
8 business and a lot of these people are being asked to
9 pick a number basically out of the blue.

10 I was part of that survey, I completed the
11 survey.

12 MS. JUBB: A: Thank you.

13 MR. GUTHRIE: Q: Part of my question was I didn't
14 recall how we did it. But again, it seemed rather
15 arbitrary just to pull 20. Why not 28 cents?

16 So anyway, my point is that would you agree
17 that you seemed to have relied quite heavily on
18 customer feedback for your pricing?

19 MS. JUBB: A: We considered customer feedback, we
20 considered the jurisdiction review of prices. Our
21 goal of wanting to improve cost recovery and recover
22 at least the electricity related costs, those were
23 factors that we considered. In particular in
24 considering a floor for the price, we wanted to make
25 sure that we could reasonably expect to recover at
26 least electricity related costs.

1 MR. GUTHRIE: Q: You've stated, and I agree, that
2 you've got three main customer groups, MURBs,
3 apartment people and condo dwellers and it sounds
4 like, Mr. Simmons, you're going after that market with
5 some of your installations. You've also got travelers
6 and you've talked about that. And then there's what
7 I'll call an owners in need group. You're running
8 around town and you don't have enough charge so you
9 need something.

10 **Proceeding Time 11:24 a.m. T34**

11 Because MURBs people are unlikely to be EV
12 owners, I'm wondering in your public survey, if
13 they're not disproportionately under represented? In
14 other words, we've got these two target groups. Did
15 we actually target the MURB, your main customers in
16 those surveys? Or were they a bunch of people like me
17 who already own EVs? And so, do you have a breakdown
18 of the EV ownership in your survey information? In
19 other words, of the surveys you conducted, how many
20 owned EVs, how many didn't?

21 MR. SIMMONS: A: This is Greg Simmons. I believe in
22 the testimony yesterday shows that our expectation
23 would be the majority of the respondents would have
24 already been electric vehicle owners.

25 MR. GUTHRIE: Q: Would you agree that the MURB group
26 would be willing to pay higher rates because they lack

1 lower cost home charging alternatives?

2 MR. SIMMONS: A: I would agree with that.

3 MR. GUTHRIE: Q: And would you agree that travelers

4 would also do that, if they are at the top of

5 Coquihalla?

6 MR. SIMMONS: A: I would agree with that.

7 MR. GUTHRIE: Q: Right. So, if there had been a higher

8 representation of travelers and MURBs, they might have

9 supported a higher price?

10 MR. SIMMONS: A: Well, I'm not sure -- are you talking

11 about MURB dwellers that -- without electric vehicles?

12 Or MURB dwellers with electric vehicles?

13 MR. GUTHRIE: Q: Do you know those numbers?

14 MR. SIMMONS: A: No.

15 MR. GUTHRIE: Q: No. I'm proposing that most MURB

16 dwellers, because of charging restrictions, are not EV

17 owners. Many would like to be, but they're not.

18 MR. SIMMONS: A: I would agree with that.

19 MR. GUTHRIE: Q: And they weren't included in your

20 survey. That's my question.

21 MR. SIMMONS: A: Yeah, I'm following, yeah, I agree

22 with that.

23 MR. GUTHRIE: Q: Okay. My concern is that we did a

24 customer survey of the wrong customers. So, in other

25 words, you proposed rates based on a survey of EV

26 owners who by your data, Mr. Simmons' data here, are

1 no longer customers. They left May 1st. So their
2 input has carried a disproportionate weight to your
3 real customers. MURBs who seem to be under
4 represented, and travelers.

5 Well, maybe I should ask that. Of the EV
6 owners, did you ask them to support or propose a rate
7 when they were travelling? Or just generally?

8 MR. SIMMONS: A: It was just generally. And going back
9 to your question, or your assertion that our customers
10 "left us", I don't believe there is any evidence of
11 that. What we do have evidence is, our customers are
12 using the chargers less. So, we don't have any
13 evidence that customers have abandoned the use of our
14 fast charging stations.

15 MR. GUTHRIE: Q: I accept that. Hopefully you'll
16 accept though, 25,000 visits down to 12,000 visits
17 means some customers are no longer there. They may
18 still be your customers, but they're not coming as
19 often?

20 MR. SIMMONS: A: They're not coming as frequently, and
21 to me that is evidence of price elasticity.

22 MR. GUTHRIE: Q: Right. So, my point is that, as I
23 said, we may have surveyed the wrong customers and
24 used their data to support an artificially low price.

25 Using minutes per rate by themselves is
26 problematic. How are owners going to assess whether

1 they would pay so many cents per minute without some
2 context? So, on your survey you say 25 cents, 23
3 cents. How is an EV owner supposed to do that without
4 context?

5 MR. SIMMONS: A: During the testimony yesterday -- and
6 first of all, I would hope that the respondents would
7 have the proper context, being EV owners to do that.

8 What I suggested yesterday in the testimony
9 is is that if we were to survey non-EV owners, we can
10 be a lot more confident that customers would not know
11 what those questions were, and they could provide
12 valuable data to us on -- as far as price discovery.
13 And so, I would hope that the pool and the population
14 of EV owners would be significantly more educated with
15 respect to the time per minute, than would be the
16 other group.

17 MR. GUTHRIE: Q: Okay. So, in conclusion, my
18 observations are is that, we may have underestimated
19 our utilization rates going forward, in a market
20 that's growing. And we may have chosen or proposing
21 rates that our customer target group would have paid
22 higher -- would have proposed a higher rate for. In
23 other words, the rates for our customer targets,
24 MURBs, long distance travelers, is lower than what
25 they'd be willing to pay simply because of their
26 charging restrictions, and that the group that we use

1 to raise the rates, or to create the rates, have other
2 alternatives, and are more than willing to not stop at
3 BC Hydro because they can go somewhere else.

4 Anyways, thank you, Mr. Chair.

5 THE CHAIRPERSON: Thank you, Mr. Guthrie.

6 MR. CHRISTIAN: Mr. Chairman, sorry, this being the
7 question and answer period, it seems to me appropriate
8 that if the witnesses, if they have any response to
9 the last set of suggestions made by Mr. Guthrie that
10 they be allowed to do so. I don't know if they do,
11 but --.

12 THE CHAIRPERSON: Please go ahead if you do?

13 MS. JUBB: A: I'd just like to note that we appreciate
14 feedback, especially from our customers, and those who
15 participate in our research on how we might be able to
16 do it better. And we appreciate your comment about,
17 you know, did we adequately survey enough of those
18 potential customers that live in multi-unit dwellings
19 and travel, and we thank you for that and we'll
20 definitely consider it in our research efforts going
21 forward.

22 **Proceeding Time 11:31 a.m. T35**

23 THE CHAIRPERSON: Anything further? No? Thank you,
24 panel, and thank you, Mr. Guthrie.

25 Mr. Coady, BCUC staff I imagine have some
26 questions?

1 MR. COADY: Yes. BCUC staff is next, their questions.

2 **CROSS-EXAMINATION BY BCUC STAFF - MR. CHEUNG:**

3 MR. CHEUNG: Q: Good morning, panel, good morning,
4 witness panel. BCUC Staff have a few questions --

5 THE CHAIRPERSON: If you could just introduce yourself,
6 please?

7 MR. CHEUNG: Q: Sorry. My name is Leon Cheung, BCUC
8 staff. And we do have a few questions related to
9 mostly Exhibit A-13, so that's the pre-SRP questions.
10 And thank you BC Hydro for incorporating your answers
11 in your presentation yesterday, so we'll have some
12 follow-ups on that as well, as well as some questions
13 where there are items there were not addressed in the
14 presentation. And how BCUC Staff is going to approach
15 this is that I'll be asking questions and our BCUC
16 staff team is going to take turns doing the same.

17 The first question is related to energy
18 based billing. And believe this question might be for
19 Mr. Papalosis -- *Papa-doe-liss*, I'm sorry.

20 MR. PAPADOULIS: A: *Papa-do-liss*.

21 MR. CHEUNG: Q: Papadoulis. And this relates to the
22 American National Standard Institute. And is I
23 understand this correctly from your presentation
24 yesterday is that prior to May 2021 there were no DC
25 meter standards approved prior to May 2021. Is my
26 understanding correct?

1 MR. PAPADOULIS: A: That is also my understanding.

2 MR. CHEUNG: Q: Okay. And are you aware of any U.S.
3 jurisdictions that have energy based billing for EV
4 fast charging?

5 MR. PAPADOULIS: A: I am, yes.

6 MR. CHEUNG: Q: Okay. Now, given that it appears that
7 in Canada and the United States we're in the same
8 situation where, at least prior to May 2021, there
9 were no DC meter standards, are there any differences
10 between Canada and the United States in terms of legal
11 requirements or other restrictions that enable U.S. EV
12 charging providers to charge by kilowatt hour?

13 MR. PAPADOULIS: A: There is absolutely differences.
14 Measurement Canada governs all of Canada in terms of
15 weights and measures and selling electricity based on
16 volume. The United States is a unique situation where
17 it's a State decision. So if you look at a map of the
18 United States you'll see that not all States have
19 energy based billing because some States decided they
20 want to regulate it, other States said, "Do whatever
21 you want." So there's -- I mean it's a different
22 country altogether.

23 **Proceeding Time 11:35 a.m. T36**

24 MR. CHEUNG: Q: Okay. So what would you describe then
25 -- what would be the role for the American National
26 Standard Institute in terms of input on the States --

1 on a State by State basis, what jurisdiction would
2 they have over the States?

3 MR. PAPADOULIS: A: I'm unable to answer that questions
4 because I'm not familiar with the individual
5 regulations in every State.

6 MR. CHEUNG: Q: Okay. Or put it the other way around,
7 in Canada each province would need to follow the
8 federal standard, would that be correct?

9 MR. PAPADOULIS: A: Correct. It's a federal
10 regulation.

11 MR. CHEUNG: Q: Okay, thank you. I'll move on to
12 carbon credits now. And these questions will be
13 related to Exhibit A-13, questions at 27.0. And I
14 won't repeat all the preamble, and I'll paraphrase,
15 essentially is my understanding correct that BC Hydro
16 had not incorporated carbon credits in the calculation
17 of the proposed rates?

18 MS. JUBB: A: That's correct.

19 MR. CHEUNG: Q: And does BC Hydro have an estimate of
20 how many carbon credits BC Hydro can generate annually
21 for its fast EV charging stations?

22 MS. JUBB: A: We don't have good estimate of that at
23 this time. We have the figure that was shared in the
24 F22 Revenue Requirements Application, and I'm
25 referring here to our BC Hydro's compliance filing in
26 response to order number G-187-21 and our application

1 to establish the low carbon fuel credits variance
2 regulatory account, long title, that was filed on July
3 16th. And in that filing, which is publicly available,
4 there is reference to the number of credits for
5 electric vehicle charging stations in the 2018
6 calendar year that was provided in response to BCOAPO
7 IR 1.67.1 in the revenue requirements application
8 proceeding. So not the proceeding we're here to
9 discuss today.

10 And as indicated there for the 2018
11 calendar year it was 137 low carbon fuel credits. My
12 understanding is that the actual number of low carbon
13 fuel credits associated with this service can be quite
14 volatile and can vary on a number of factors. And we
15 acknowledged and considered BCUC staff request to
16 estimate what might be the value of low carbon fuel
17 credits associated with a service and I was unable to
18 develop what I would consider to be a reliable
19 estimate of that, because I understand from staff
20 involved in this work, which I'm not close to, but I
21 understand from them that the 137 low carbon fuel
22 credits from 2018, they don't expect that to
23 necessarily represent a go-forward number.

24 MR. CHEUNG: Q: Okay, thank you, Ms. Jubb. And is my
25 understanding correct that BC Hydro transfers the
26 carbon credits to Powerex?

1 MS. JUBB: A: It is my understanding that currently BC
2 Hydro does transfer the credits to Powerex. That is,
3 yes, that is my -- yes. I can confirm that.

4 MR. CHEUNG: Q: Thank you. And I'm about to hand out
5 an excerpt -- or some publications from the Ministry
6 of Energy, Mines and Low Carbon Innovation and I'll
7 ask the Court Reporter to mark it as an exhibit.

8 MR. CHRISTIAN: Mr. Cheung, I wonder if you can you can
9 just describe the Exhibit so I make sure I've got the
10 right one in front of me.

11 THE HEARING OFFICER: Marked Exhibit A2 --

12 MR. CHEUNG: A2-5 I believe.

13 (MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION
14 PUBLICATION MARKED EXHIBIT A2-5)

15 MR. CHEUNG: Q: And it's Leon Cheung speaking again.
16 And this -- let me get one myself.

17 There are two documents here. The first
18 one is dated March 23rd, 2021 and that's Information
19 Bulletin RLCF-013. And basically this is a list of
20 recognized Part 3 fuel suppliers under Part 3 of the
21 low carbon fuel credit and debit transfers. And this
22 relates to the Renewable and Low Carbon Fuel
23 Requirements Regulation.

24 **Proceeding Time 11:42 a.m. T37**

25 The second document included in this A2-5
26 Exhibit, that one is titled "credit transfer

1 activity", and that one is dated July 2021, and that
2 is information bulletin RLCF-017.

3 So, moving along to the questions, in the
4 information bulletin 013, under fair market value, so
5 this is the first page, the front page, the paragraph
6 says,

7 "All credit and debit transfer proposals
8 must include a fair market value of any
9 consideration under Section 11.11(2)(c)(iv)
10 of the regulation. Transfers that the
11 director considers are underestimating fair
12 market value or those using a zero dollar
13 value must include a written explanation
14 justifying the use of the identified credit
15 or debit value."

16 Given that context, I would like to first
17 ask a confirmation question. Can BC Hydro confirm
18 that BC Hydro and Powerex Corporation are currently a
19 recognize Part 3 fuel supplier?

20 MS. JUBB: A: I'm actually unable to confirm that, as
21 this is not my area of expertise. It sounds
22 reasonable, but I would have to -- can I say
23 confirmed, subject to check?

24 MR. CHEUNG: Q: Right. And I would turn to page 2 of
25 that exhibit, BC Hydro is noted in the third row of
26 that table. And Powerex is noted in the following
page, on the following page, the third row of that

1 table as well, so.

2 THE CHAIRPERSON: Perhaps Ms. Jubb could just confirm
3 what Mr. Cheung said is correct. That BC Hydro is --
4 both BC Hydro and Powerex are in the table as
5 recognized fuel suppliers in this exhibit.

6 MS. JUBB: A: I can confirm that.

7 THE CHAIRPERSON: Thank you.

8 THE CHAIRPERSON: Is that all right, Mr. Cheung?

9 MR. CHEUNG: Q: Thank you. And you may or may not know
10 this, when the carbon credits are transferred to
11 Powerex from BC Hydro do you know if this is done
12 through a fair market value or at zero dollars?

13 MS. JUBB: A: I don't have any specific knowledge of
14 that. The topic may have been covered in our
15 compliance filing that I referenced earlier on July
16 16th, which contains an application in respect of the
17 treatment of low carbon fuel credits and addresses the
18 value of those credits in the relationship with
19 Powerex. So, if it is here, I can cite it but I
20 actually have no personal knowledge of that
21 arrangement.

22 MR. CHEUNG: Q: Okay. And is this July 16th compliance
23 filing on the record?

24 MS. JUBB: A: It is. It's been publicly -- it's not on
25 the record of this proceeding, but it has been
26 publicly filed in the revenue requirements application

1 proceeding, the F22 revenue requirements application
2 proceeding.

3 MR. CHEUNG: Q: Okay. So for the benefit of the
4 participants in this proceeding would BC Hydro be
5 amenable to provide that in this proceeding's record?

6 MR. CHRISTIAN: We have no objection to it being placed
7 on the record, but it's already in the Commission's
8 possessions so I think it would be appropriate for
9 staff to enter it as exhibit if they thought it was
10 necessary.

11 THE CHAIRPERSON: As long as it's posted on our
12 website. If it's not posted on our website, perhaps
13 we could post it as an exhibit. If that's all right
14 with everyone.

15 MR. CHEUNG: Q: And my last question related to this
16 topic is, I understand that these carbon credit
17 revenues related to EV charging are not in the
18 proposed rates. If the Commission -- if the BCUC
19 directs BC Hydro to calculate that to be include -- to
20 include the revenues from the monetization of the low
21 carbon fuel credits. Would that be possible?

22 **Proceeding Time 11:47 a.m. T38**

23 MS. JUBB: A: There's two parts to my response. First,
24 my understanding is, based on the application we've
25 been discussing, the application that was filed on
26 July 16th where we have applied to establish a low

1 carbon fuel credit variance regulatory account, my
2 understanding is that that application includes
3 reporting of the value of low carbon fuel credits. So
4 the transparency of information with respect to the
5 credits will flow from this filing. So the
6 information will be available if this application is
7 approved. That's my understanding. So, in terms of
8 the information being available, yes, it will be
9 available.

10 I'm also -- the second part of my response
11 would be that I understand BC Hydro's view is that the
12 revenue from the credits, low carbon fuel credits, to
13 reduce the overall revenue requirement for the benefit
14 of all ratepayers because this approach recognizes
15 that the investment in clean energy infrastructure has
16 been funded by all ratepayers. We get the benefit of
17 those credits because of investments that all
18 ratepayers have made in our clean electricity system
19 over time. And for that reason BC Hydro's view is
20 that the benefits should flow back to all ratepayers,
21 not to individual customer groups.

22 MR. CHEUNG: Q: Okay. And how -- just looking at
23 Exhibit B-14, the scenarios that were presented this
24 morning, if BC Hydro was to consider these carbon
25 credit revenues, would that be classified under
26 capital costs, maintenance costs or operational costs

1 or some other cost category? Or it would be an
2 offset, but --

3 MS. JUBB: A: To clarify, it's not -- such revenues are
4 not included in Exhibit B-14. If they were considered
5 as an offset to the cost of electric vehicle fast
6 charging, I would have to ask my colleagues in
7 accounting how that would actually work.

8 MR. CHEUNG: Q: Okay.

9 MS. JUBB: A: Yeah, I'm not sure how the accounting
10 would work in that case.

11 MR. CHEUNG: Q: That's fine. Thank you. The next set
12 of questions is related to customer support. In
13 Exhibit A-13 there were several questions related to
14 customer support, and in particular questions 11.8
15 through 11.11. And that should be on page 16 or 17 of
16 that exhibit.

17 BC Hydro in response to BCSEA-VEVA in IR
18 1.1.1 provided a document called "EV fast charging
19 design and operational guidelines for public DCFC
20 stations in B.C.", and that document is dated March
21 2021. And included in those guidelines BC Hydro
22 discussed a spectrum of service levels regarding
23 customer support. So there was minimum service levels
24 and recommended service levels, I believe.

25 First question is, does BC Hydro also
26 follow these guidelines when you deploy EV charging

1 stations?

2 MR. SIMMONS: A: This is Greg Simmons. BC Hydro
3 strives to meet or adhere to or exceed these
4 guidelines wherever practical.

5 MR. CHEUNG: Q: And in terms of the customer support
6 function, is that done in-house or is that an
7 outsourced activity?

8 **Proceeding Time 11:51 a.m. T39**

9 MR. SIMMONS: A: It's actually a combination of both.
10 So calls that occur during the call centre hours,
11 which I have here at 7:00 a.m. to 8:00 p.m., Monday to
12 Friday, and Saturday to Sunday 9:00 a.m. to 5:00 p.m.
13 our contact centre is open. So during those hours if
14 someone at our station should call the number for
15 assistance, they will be routed to our contact centre,
16 BC Hydro's contact centre. Outside of those hours
17 they would be routed to the contact centre operated by
18 AddEnergie.

19 MR. CHEUNG: Q: Okay, so essentially some sort of
20 customer support is available 24/7, 365?

21 MR. SIMMONS: A: Yes, correct.

22 MR. CHEUNG: Q: Okay, great. Okay, and in order to
23 operate this customer support function is that -- if I
24 recall correctly this morning the witness panel said
25 it costs \$270,000 for contact staff cost?

26 MR. SIMMONS: A: I'll just confirm that for BC Hydro's

1 contact centre support during the hours that I
2 identified, we estimate that that is \$270,000 per
3 year.

4 MR. CHEUNG: Q: Per year, okay. And do you have a
5 sense of how much that costs for the AddEnergie
6 portion?

7 MR. SIMMONS: A: Well, the AddEnergie call centre would
8 be embedded in our network management service costs
9 and it's a -- just subject to check.

10 I'm unsure of whether or not they charge
11 separately for calls or it's embedded in network
12 management services. My understanding was it was
13 included, but I'm not sure.

14 MR. CHEUNG: Q: Okay, that's fine. Essentially the
15 \$270,000 per year, that's only for the BC Hydro staff?

16 MR. SIMMONS: A: Correct.

17 MR. CHEUNG: Q: Okay.

18 MR. SIMMONS: A: That's for BC Hydro contact centre.

19 MR. CHEUNG: Q: And my apologies if I missed it this
20 morning, which scenario would that cost be reflected
21 in Exhibit B-14?

22 MR. SEONG: A: This is Mark Seong. That would be in
23 the scenario 4D of Exhibit B-14.

24 MR. CHEUNG: Q: Okay, so 4D only or is that 5 as well?

25 MR. SEONG: A: Sorry. Yes, 4D and 5. 5 includes all
26 the scenarios together.

1 MR. CHEUNG: Q: Okay.

2 MS. JUBB: A: And to clarify in case it helps, my
3 understanding is scenario 4D and scenario 5 also
4 include the non-labour costs of 280,000 per year, a
5 portion of that of which is this after-hours call
6 centre support.

7 MR. CHEUNG: Q: Okay, so that's all in for customer
8 support. Okay, great. Thank you.

9 Panel, Chair, those are all of my
10 questions. I will pas it to another BCUC staff.

11 THE CHAIRPERSON: Oh, actually, Mr. Cheung, I think we're
12 getting very close to lunch time. There's a glare
13 there, five to 12:00 I think. So why don't we take a
14 break for lunch at this point and we'll come back at
15 one o'clock. Thank you.

16 **(PROCEEDINGS ADJOURNED AT 11:55 A.M.)**

17 **(PROCEEDINGS RESUMED AT 1:02 P.M.) T40/T41**

18 THE CHAIRPERSON: Please be seated. Thank you and
19 welcome back. Hope you all had a good lunch.

20 Mr. Christian, you have something for me.

21 MR. CHRISTIAN: Just a preliminary matter, Mr. Chair.
22 I've got a couple, I guess, clarifications from the
23 record from this morning and one subject to check that
24 needs to be corrected.

25 THE CHAIRPERSON: That would be appreciated, thank you.
26 Please go ahead.

1 MS. JUBB: A: Thank you. I would like to clarify the
2 response that we provided this morning to Ms. Worth
3 regarding capital overhead, which shows up in Exhibit
4 B-14.

5 THE CHAIRPERSON: Ms. Jubb, just one -- let me make
6 sure that we have Ms. Worth here.

7 Ms. Worth, are you on line?

8 MS. WORTH: Yes, I am, thank you.

9 THE CHAIRPERSON: Great, thank you. Okay, please go
10 ahead.

11 MS. JUBB: A: And I recall Ms. Worth had asked us a
12 question about overhead costs and I just wanted to
13 provide a clarification as to what is captured in
14 capital overhead. Capital overhead only includes costs
15 that are able to be capitalized under accounting rules
16 for people working on capital projects. For clarity,
17 it's not general overhead for, say, corporate costs or
18 senior leaders.

19 We also had -- we had one more matter to
20 clarify from the transcript regarding a question from
21 BCUC staff and we have a subject to check.

22 THE CHAIRPERSON: Okay.

23 MS. JUBB: A: So Mr. Simmons?

24 MR. SIMMONS: A: Thank you, Ms. Jubb. We discussed
25 earlier the BC Hydro contact centre costs which we
26 indicated were \$270,000. We do have a forecast of the

1 out-of-hours cost for the AddEnergie Call Centre and
2 that would be \$40,000. So that \$40,000 for call
3 centre costs are in addition to the \$270,000 BC Hydro
4 contact centre costs. And they are included in the
5 \$280,000 figure that we had cited earlier.

6 The next is a subject to, and that related
7 to a question posed by Ms. Worth of B.C. Old Age
8 Pensioners and that was related to the number of
9 electric vehicles on the road that corresponds to the
10 15 percent utilization that Mr. Seong had cited. And
11 I had indicated, I believe, it was 40 to 45 thousand.
12 The year which that 15 percent applied to was our
13 fiscal 2020, so it goes from April 1, 2019 to March
14 31st, 2020.

15 Based on ICBC registration data I estimate
16 that there were about 31,000 electric vehicles on the
17 road during that particular period. That's a mid-year
18 estimate. Obviously it's growing, about 23,000 at the
19 beginning of the period and about 40,000 at the end of
20 the period.

21 MR. SEONG: A: Mr. Mark Seong. I also wanted to,
22 subject to check a component where I had said in
23 earlier testimony that a 15 percent utilization before
24 the rate came in was from fiscal 2021. That's
25 actually fiscal 2020. Thank you.

26 THE CHAIRPERSON: Thank you. We have another

1 questioner, Mr. Cheung?

2 **CROSS-EXAMINATION BY BCUC STAFF - MS. LAI:**

3 MS. LAI: Q: Good afternoon, I'm Tanya Lai and I'm part
4 of the BCUC staff.

5 This morning's testimony, in exchange with
6 Mr. Cheung, BC Hydro mentioned that its network
7 management service provider is AddEnergie. Would you
8 be able to speak to when your network management
9 service contract with AddEnergie expires?

10 MR. SIMMONS: A: The contract with AddEnergie expires
11 in the spring of next year. Actually I take that
12 back. So the contract that is in place is renewable
13 every year and we are in the midst of trying to
14 renegotiate terms with AddEnergie, and that contract,
15 we haven't come to terms, so we've just rolled over
16 the existing contract with the existing terms, which
17 will expire in the spring of 2022.

18 **Time 1:07 p.m. T42**

19 MS. LAI: Q: Okay. Thank you. And yesterday, the BC
20 Hydro panel explained that its network management
21 system cannot bill by kilowatt hour. And the reason
22 is that your network management service provider is a
23 Canadian firm who is not going to build that
24 functionality into their charger until Measurement
25 Canada approves per kilowatt hour billing for direct
26 current measurement.

1 Are you aware of any other network
2 management system provider in Canada or elsewhere who
3 can provide billing software to enable billing by
4 kilowatt hour?

5 MR. SIMMONS: A: This is Greg Simmons. We do know of
6 one provider who recently was the network management
7 service provider for some of BC Hydro stations, and
8 that provider is Greenlots, and at that particular
9 time they were able to bill by kilowatt hour, using
10 the embedded meter in the charger.

11 MS. LAI: Q: And would you be able to provide an
12 estimate of the cost and time to acquire that billing
13 technology from Greenlot to enable BC Hydro to bill
14 per kilowatt hour?

15 MR. SIMMONS: A: If we were to go and take on
16 Greenlots, it would be -- I don't have the exact
17 number, but it would come at fairly significant
18 expense. And the reason being, is that we have
19 procured what's referred to as a white label network
20 management system. And by white label it means, that
21 BC Hydro is able to put its logo and branding on all
22 the customer interfaces of that network management
23 system, so the App on your phone, the RFID card has BC
24 Hydro's logo colours and branding on it. We would
25 have to transfer all that to Greenlots, and each of
26 these network management service entities, they do

1 known about prior to coming to this SRP.

2 THE CHAIRPERSON: Mr. Christian.

3 MR. CHRISTIAN: And again, to reiterate, submissions we
4 made yesterday, the SRP as it is described in the
5 guidelines is an opportunity for oral question and
6 answer period, so we did not create models in advance
7 of the SRP for the purpose of providing --

8 THE CHAIRPERSON: Understood. So, would this involve
9 the creation of a model? Or are you being asked to
10 file a model that already exists?

11 MR. CHRISTIAN: I think there is two issues. Whether
12 the model exists, and whether it should be entered
13 into evidence, and I think I was addressing initially
14 the latter question, whether it should be entered into
15 evidence. I think the model exists, because we
16 created a document.

17 THE CHAIRPERSON: And it has been asked for previously
18 to be entered into evidence, correct?

19 MR. CHRISTIAN: Right. I'm not sure if it is the same
20 model, but a model at least. I think -- I don't want
21 to belabor this point. If the model is ready, and the
22 Commission panel thinks it is of value, then of course
23 it should be entered.

24 THE CHAIRPERSON: Well, if the model is ready, and it
25 exists, and if we have asked for it previously, then I
26 think it should be entered into evidence. If we are

1 for fiscal '22 versus the Scenario 5 provided in
2 Exhibit B-14?

3 MS. JUBB: A: This morning we discussed how the effort
4 that was undertaken for the fast charging rate
5 application would ideally involve a precise allocation
6 of costs. And that the revenue requirements process
7 doesn't follow that same approach. So the two sets of
8 information are not the same and there's not an
9 immediate reconciliation or match between the two sets
10 of information.

11 For the Exhibit B-14, we attempted to do a
12 rudimentary allocation but that's -- the revenue
13 requirements doesn't use that same approach.

14 MS. LAI: Q: Okay, thank you for explaining that.

15 MS. JUBB: A: I would also provide some IR references
16 from the round one IRs that I understand also speak to
17 this matter of the reconciliation. There is BCUC IR
18 1.75 that describes how the application did not
19 address the labour costs that show up in the RRA.
20 There was also BCOAPO IR 1.12.2 that describes the
21 maintenance related costs.

22 MS. LAI: Q: Okay, thank you. So, for Exhibit B-14 are
23 you able to reproduce this based on a depreciation
24 rate using a five-year useful life versus the ten-
25 years that is currently used?

26 MR. SEONG: A: This is Mark Seong. And the live model

1 MR. SEONG: A: I don't know a hundred percent for sure,
2 no.

3 MS. LAI: Q: Okay.

4 MR. SIMMONS: A: This is Greg Simmons. I can provide
5 some context on that. So, the chargers will feed into
6 what's referred to as a transformer kiosk. And when
7 we design and deploy those transformer kiosks, they
8 have a specific capacity. And my understanding is is
9 that several years ago our standard designs included
10 capacity for a second 50 kilowatt charger, and some I
11 believe would have capacity up to 150 kilowatts, and
12 that would be fewer still. But, they're at capacity.

13 So, to upgrade from a 50 to 100, there are
14 a number of transformer kiosks or single station sites
15 that can be upgraded and there are potentially a few
16 that can be upgraded to 150 kilowatts if need be.

17 MS. LAI: Q: Okay, thank you. Yesterday, BC Hydro
18 explained that they are proposing to adjust the rate
19 from Fiscal 2023 forward for the ease of
20 administration and costs. BC Hydro also explained
21 that adjusting the rate would require sending staff
22 out to each charging station to program the change.
23 Could you provide an estimate of what the cost is to
24 send staff out to each charger to implement rate
25 changes?

26 MS. JUBB: A: I'd first like to clarify, my

1 understanding is that we are discussing the
2 application of general rate increases?

3 MS. LAI: Q: Yes.

4 MR. SIMMONS: A: This is Greg Simmons. So, when there
5 is a rate change, there is two avenues we can pursue.
6 We can, and those within BC Hydro that have remote
7 access to our machines, they can manually go in and
8 adjust these. But, the issue being is the rate change
9 has to occur say at midnight or something, so the
10 first issue is we need to have staff up at midnight
11 that are on their computers making these changes. And
12 secondly is there are a number, there are 97 stations
13 currently, so it takes a bit of time to do that.

14 When we implemented the interim rate on May
15 1st it was actually AddEnergie, our network service
16 provider, that developed a script on their system that
17 updated all of our chargers almost simultaneously. I
18 do not know what the cost of that was, if there was
19 indeed a cost to do that.

20 MS. LAI: Q: Thank you.

21 THE CHAIRPERSON: Sorry, if I could just jump in. So,
22 presumably that procedure could be utilized in the
23 future though, correct? I mean, you could run the
24 same script or a similar script in future?

25 MR. SIMMONS: A: Yeah, I both of those procedures,
26 either manually or AddEnergie to do. I suspect there

1 was a cost to it, but I am not 100 percent certain on
2 that.

3 THE CHAIRPERSON: Thank you.

4 MS. LAI: Q: Okay, yesterday the BC Hydro panel
5 explained why conducting a fully allocate cost of
6 service analysis requires at least one full year of
7 electricity data. The panel also explained why it is
8 proposing to file a single comprehensive evaluation,
9 when it is able to redesign the rate, which it
10 believes is in 2024 or earlier, if it could implement
11 an energy-based rate based on a Measurement Canada
12 approved standard for DC metering. Could you please
13 confirm that BC Hydro does plan to prepare a cost of
14 service allocation study, which will be filed as part
15 of the evaluation report?

16 MS. JUBB: A: I can confirm that we will include a cost
17 of service study for this service, for fast charging
18 service, BC Hydro's public fast charging service in
19 the evaluation report.

20 **Proceeding Time 1:23 p.m. T45**

21 MS. LAI: Q: Thank you. In Exhibit A-13, BCUC IR
22 series 28, sought clarification on BC Hydro's response
23 to BCUC IR 2.4.2 from Exhibit B-4. In that IR
24 response BC Hydro stated that it may be possible to
25 charge a rate rider applicable only to those rate
26 schedules for EV fast charging services to over time

1 collect the cost incurred in fiscal '20 and fiscal '21
2 related to providing EV fast charging service.

3 Could you please clarify whether the rate
4 rider mechanism described in that IR response, 2.4.2,
5 could, in addition to collecting the cost incurred in
6 fiscal '20 and '21, could it be used to collect from
7 BC Hydro's EV fast charging customers the cost related
8 to providing that service for fiscal '22 and onwards
9 that have been collected from Hydro's other
10 ratepayers?

11 MR. SEONG: A: This is Mark Seong. For that
12 calculation we estimate about 13 years payback, based
13 on, again, a simplified assumption that we've used
14 using the existing costs that we know of \$7.7 million,
15 and then assuming that the cost will continue to grow
16 at the same rate as last year. And then also assuming
17 that the utilization rate would grow at the same rate
18 as illustrated by the Rocky Mountain Institute study
19 of the 5 percent first three years, 10 percent next
20 three and then 30 percent thereafter. And using them
21 then we calculated estimated result was about 13 years
22 payback. And, obviously, the payback years would
23 increase by future users if the utilization rate
24 doesn't reach that level of 30 percent.

25 MS. LAI: Q: Okay. So that 13 year payback, just so I
26 understand, is that just for recovering the fiscal '20

1 and '21 cost, that does not take into account future
2 costs of providing EV charging service?

3 MR. SEONG: A: It's including the future costs as well.
4 So, we assumed that the costs would continue at the
5 same rate as the, I guess, last year which would have
6 been fiscal 2020 -- '22 assumption that we have.

7 MS. LAI: Q: Okay, thank you.

8 MR. SEONG: A: And just as a reference, if you want to
9 go back it was part of the testimony from yesterday,
10 page 142 from the transcript.

11 MS. LAI: Q: And, hypothetically, without the use of a
12 rate rider mechanism would it be possible to achieve
13 the same result? In other words, collect past costs
14 related to EV charging service that has been recovered
15 or will be recovered from other customers. Could that
16 be done by increasing the rate for EV fast charging
17 service in future years once the utilization rate has
18 increased? So, in other words, you're over recovering
19 in future years to make up for under recovering in the
20 past.

21 MS. JUBB: A: Hypothetically if we were -- in the case
22 where we had utilization so high that we were over
23 recovering costs, then that could contribute to costs
24 incurred in past years.

25 MS. LAI: Q: And, hypothetically, if the BCUC were to
26 direct either a rate rider mechanism be established or

1 for rates to increase such that they over recover
2 these costs, would either of these mechanism conform
3 to Section 18(2) of the *Clean Energy Act* or be
4 considered retroactive rate setting?

5 MR. CHRISTIAN: It's Jeff Christian. This is one of
6 the IRs I think I referred to, again, yesterday that
7 was clearly it's a legal submission. We propose to
8 deal with this in written argument.

9 THE CHAIRPERSON: Agreed.

10 MS. LAI: That's fine, thank you.

11 **Proceeding Time 1:28 p.m. T46**

12 MS. LAI: Q: Okay, I'll move on now. In Exhibit A-13
13 BCUC IR 28.8, the BCUC had requested a table that
14 provides a breakdown of the revenue and costs incurred
15 by BC Hydro by fiscal year since 2013 to provide EV
16 fast charging services and to provide the amounts that
17 have been recovered from or refunded to BC Hydro's
18 ratepayers for those services. Would you be able to
19 provide us that table as an undertaking?

20 MS. JUBB: A: I'm not sure I can. I had obviously
21 considered the question when it came in and it's not
22 readily apparent to me that this is straightforward to
23 do. It is a revenue requirements application type
24 depiction of information, so it's not type of -- going
25 back to costs, O&M depreciation costs of energy back
26 to F2013 is not an input to our rate application. So

1 I'm not sure that we can produce this or what it would
2 take to produce this table that is referred to in
3 question 28.8 of Exhibit A-13.

4 MS. LAI: Q: Okay, just to clarify, are you saying you
5 can't produce it or would it be more appropriate to
6 produce it for the revenue requirement proceeding?

7 MS. JUBB: A: So it certainly is a revenue requirement
8 proceeding type question in terms of asking for costs
9 as they are depicted in the revenue requirements
10 application. So based on the format of the
11 information requested it certainly seems like a
12 revenue requirements proceeding type question.

13 What I don't know, I don't know if that can
14 be produced back to F13 or not. That's -- I actually
15 don't know the answer to that question.

16 MS. LAI: Q: Do you know if BC Hydro tracks your -- or
17 tracks the costs to provide EV charging?

18 MS. JUBB: A: I do know that we have the costs that are
19 -- have been tracked and reported in the compliance
20 filing referenced earlier today in testimony that I --
21 and I understand BCUC will ask to be added as an
22 exhibit. And that client's filing, which is BC
23 Hydro's -- it is BC Hydro's compliance filing in
24 response to order number G-187-21, an application to
25 establish the low carbon fuel credits variance
26 regulatory account, it does present costs in the

1 going back to F2013 and I'm not sure what's available
2 in that respect.

3 MS. LAI: Q: Okay. Thanks for clarifying that, thank
4 you. That's all the questions that I have and I'll
5 turn it over to my colleague.

6 **CROSS-EXAMINATION BY BCUC STAFF - MS. TRAN:**

7 MS. TRAN: Q: Good afternoon panel and BC Hydro panel.
8 My name is Julie Tran and I'm here as BCUC staff. My
9 name, Tran, T-R-A-N.

10 So yesterday when we were discussing slide
11 2 of your presentation in Exhibit B-13, I believe, Ms.
12 Jubb, you mentioned that time based rate designed are
13 not wide spread but they are used. And you referenced
14 the case of BC Hydro's rate schedule 1701 related to
15 street lights, which are time based.

16 I would like to understand whether the
17 rates in RS 1701 are time based only or a mixture of
18 time based and energy based. And so if you could
19 please turn you attention to rate schedule 1701, and I
20 think we would like to enter that as an exhibit, A2, I
21 believe it's A2-6.

22 THE HEARING OFFICER: Marked Exhibit A2-6.

23 (BC HYDRO RATE SCHEDULE 1701 MARKED EXHIBIT A2-6)

24 MS. TRAN: Q: So, I believe BC Hydro panel has the rate
25 schedule 1701 in front of them so I will keep going.
26 Would you agree that at a high level BC Hydro's rates

1 can be described as being measured per fixture per
2 month but there are also different rates based on the
3 wattage of the lighting fixture?

4 MS. JUBB: A: That is correct. So the rate schedule
5 that we are discussing is rate schedule 1701, which is
6 available for lighting highways, streets, public
7 highway, streets and lanes in cases where BC Hydro
8 owns the fixture. So, we are providing the fixture as
9 well as the energy.

10 So in that respect it's different from a
11 number of our rate schedules where we only provide the
12 electricity. So, similar -- in some ways, similar to
13 fast charging. In the street lighting rate schedule
14 1701 we're providing electricity as well as the use of
15 an asset. The rates in rate schedule 1701 are time
16 based and they vary based on -- so they're all
17 expressed in dollars per month and the dollar per
18 month charge that applies depends on the wattage of
19 the fixture that the customer selects.

20 MS. TRAN: Q: So would you agree that this type of rate
21 design then is a mix of time based and energy based
22 rate design, a bit similar to the tiered rate that
23 Electrify Canada uses where the rate charged is based
24 on the maximum capacity that the EV is able to take?
25 In other words, you have fixtures that have certain
26 wattage and BC Hydro bills based on the fixture's

1 wattage. So if you transpose this to the EV fast
2 charging rate design, would you agree that this is
3 most similar to a rate that is charged based on the
4 capacity of the car to accept power?

5 **Proceeding Time 1:38 p.m. T48**

6 MS. JUBB: A: I'm not sure I would characterize it that
7 way. I'm not close enough to a tier-based rate design
8 to comment on it, but I would consider there to be a
9 parallel between rate schedule 1701 where we've
10 proposed rates and a dollars per month, that change
11 depending on the wattage level of the fixture, as
12 being somewhat similar to our proposal to have
13 separate rates for the 25 kW station, versus the 50 kW
14 station, versus the 100. We have proposed different
15 charges for each of those power levels. In the case
16 of fast charging service we also have proposed
17 separate rate schedules. Here in 1701 it is a
18 combined rate schedule, but that is where I would see
19 the similarity as being.

20 MS. TRAN: Q: But in the case of the EV fast charging
21 service, BC Hydro has proposed different rates for
22 different power level station. But that's not the
23 equipment that the customer is plugging in to. So,
24 here in the streetlighting rate schedule, the rate
25 adjust based on the customers equipment wattage, and
26 therefore -- or if we compared that to the EV fast

1 charging service from BC Hydro, the rate doesn't
2 adjust based on the capacity of the car to draw power
3 from the station.

4 MS. JUBB: A: So, I would agree that the rate, the fast
5 charging rates do not adjust based on the ability of
6 the vehicle to draw power. I am not -- I didn't
7 entirely follow the preamble to that statement, so I
8 am unable to confirm what was said previously, but
9 would be happy to try if you would restate the
10 question.

11 MS. TRAN: Q: It's okay, I just wanted to understand
12 better whether the rate schedule 1701 was purely a
13 time-based rate, or if it was indeed a mixture of
14 time-based and energy-based, because it was
15 recognizing the wattage or the capacity of the
16 customer's equipment to take or use power.

17 MS. JUBB: A: To clarify, rate schedule 1701, the
18 equipment is owned by BC Hydro. BC Hydro owns and
19 installs and maintains the fixtures, conductors,
20 controllers and poles. So, the customer does not own
21 the equipment under rate schedule 1701.

22 MS. TRAN: Q: Thank you. Now I'll follow up with
23 something I think you also said yesterday, so I will
24 refer you to transcript Volume 1, page 71, lines 13 to
25 21, where I think you mentioned, and I can read it for
26 everybody, that,

1 "...is that additional complexity in rate design
2 imposes additional costs. So there could be
3 costs such as metering and billing, and
4 customer communication that would be more
5 costly to implement than a simple time-based
6 rate. And at this time we don't have enough
7 information to know whether those additional
8 costs are justified and we plan to examine
9 those questions through the evaluation."

10 So, could you walk us through how you would
11 plan to examine those questions through the
12 evaluation? In other words, how will BC Hydro
13 determine whether the potential for additional costs
14 from metering or billing or customer communication
15 would outweigh the potential benefits in terms of
16 fairness of cost allocation, that more sophisticated
17 rate designs could achieve?

18 MS. JUBB: A: I'll provide an illustrative discussion.
19 Absent having the information right in front of me in
20 terms of what the costs and the data are, it will be
21 illustrative only.

22 But, let's say for example electricity-
23 based rates could be implemented and Measurement
24 Canada had approved that standard. We would first
25 want to understand what are the costs for any metering
26 and billing system upgrades that might be associated
 with implementing that type of rate design. And then

1 we would want to understand if the performance of that
2 design was significantly better on Bonbright criteria
3 which is the standard framework that we would use, and
4 I'll just refer to the Bonbright table that we
5 included on page 35 of the application.

6 **Proceeding Time 1:42 p.m. T49**

7 That is a widely accepted rate design criteria,
8 looking at Bonbright, and it's how we assess BC
9 Hydro's rate design. And the Commission cites
10 Bonbright in many rate design decisions.

11 So some of the things -- a main thing that
12 we would look at with any rate redesign would really
13 be looking at the fairness criteria around fair
14 apportionment of costs and avoiding undue
15 discrimination, to address the issue that over the
16 near term, as stated here, the revenues will not
17 recover all of the cost of service.

18 So if the rate design proposed, if we could
19 reasonably expect that it could increase revenue, then
20 it would improve performance on this Bonbright
21 criteria of fairness, and it would very much, I think,
22 encourage us to adopt that type of rate design.

23 How it could potentially increase revenue
24 might be a fit provided a better customer experience
25 so that customers were more inclined to use it. Maybe
26 if customers felt it was more fair there might be some

1 -- less of the apparent self-selection bias that Mr.
2 Simmons mentioned earlier in terms of what he's seen
3 in the data. And we could test that by asking our
4 customers if they would -- how they might respond to
5 this type of rate design.

6 So that's a general description of the
7 framework we would use, and we'd want to have some
8 reasonable confidence that the benefits, particular of
9 increased revenue, would at least be equal to the
10 cost.

11 MS. TRAN: Q: I was thinking in particular -- I think
12 the BCUC has posted in Exhibit A2 -- I can't remember
13 off the top of my head if it was A-1 or A-2, but it
14 talked about the budget and Measurement Canada having
15 received funding to develop standards to approve
16 kilowatt hour base billing for the next five years. I
17 mean the funding was provided for the next five years.
18 And I think BC Hydro stated yesterday that you don't
19 want to speculate how or when Measurement Canada might
20 be approving a kilowatt hour based device.

21 Therefore, if assuming that by the time you
22 file an evaluation report in three years or in a bit
23 less than three years, there is still no kilowatt hour
24 measuring device approved, that's when perhaps
25 alternative rate designs, such as those put forward by
26 Electrify Canada that tried to address the fairness

1 issue, could be useful, and therefore I was just
2 trying to understand how, at that time, assuming there
3 is no kilowatt hour measuring device approved then,
4 how BC Hydro would then evaluate if going to a more
5 costly sophisticated complex rate design would, you
6 know, outweigh -- the cost to doing that would
7 outweigh -- or the benefits of doing that would
8 outweigh the costs.

9 MS. JUBB: A: Well, perhaps I can give another example
10 that's maybe a little bit readily apparent and doesn't
11 rely on the Measurement Canada issue, which we are all
12 eagerly waiting resolution of.

13 An example would be an idling charge, and
14 the concept of idling charges were, I think, raised in
15 some BCUC staff IRs and why didn't we have idling
16 charges. So idling charges, we would -- to assess the
17 potential benefits, the financial benefits in terms of
18 revenues from idling charges, we could analyze station
19 congestion, and understand how much congestion is
20 there right now, and if we were able to put in a price
21 signal to drive down congestion, we might be able to
22 come up with an estimate of the opportunity there in
23 terms of the opportunity for revenue increase.

24 **Proceeding Time 1:47 p.m. T50**

25 We would have to balance that opportunity
26 against the cost of implementing idling fees, and also

1 Bonbright also has and puts weight, reasonably so, on
2 customer understanding and acceptance. So if idling
3 -- if we had customer research that indicated that
4 idling fees were just really unacceptable to
5 customers, even if the revenue, the resulting revenue
6 bump may be quite high, I think we would tread
7 carefully. And I'm not sure we would completely
8 dismiss it, idling fees, but we might tread more
9 gently in terms of how aggressive that price signal
10 would be.

11 MS. TRAN: Q: So, thank you for your explanation. I
12 think it's a good segue to jump into the idling fees
13 question that I had for later. So, you would go out
14 to customers and ask whether they would be amenable to
15 an idling fee. And I think we can expect that nobody
16 is amenable to paying more fees. And I think you had
17 said before in your response to IR 1 that -- in
18 response to IR 18.6.1 in Exhibit B-4, you had indeed
19 noted that an idling fee could reduce overall customer
20 satisfaction.

21 However, in response to BCSEA-VEVA 5.2 in
22 Exhibit B-5, BC Hydro also stated that the decision to
23 expand an existing site beyond two EV fast charging
24 stations will be dependent on station utilization and
25 the incidents of stations congestion. Excessive
26 queuing can lead to poor customer experience and may

1 inhibit the adoption of electric vehicle.

2 So, I think when considering idling fees
3 perhaps, you know, considering that customer
4 satisfaction could also decrease if there is queuing
5 and other EV driver abusing from the station could
6 also lead to customer dissatisfaction. That would --
7 would BC Hydro take that into account as well in their
8 customer survey?

9 MR. SIMMONS: A: This is Greg Simmons here. I think as
10 a contributor to station congestion, although I would
11 agree that excessive idling can lead to station
12 congestion. And by definition "idling" means that the
13 charging session is completed and the individual has
14 not moved their vehicle. It's connected and it's not
15 -- a colloquial term is "station squatting" as people
16 just stay there. And it's certainly -- I'm not really
17 sure the extent of idling as an issue. I mean, we
18 have in the past noticed some fairly excessive -- on
19 the Greenlot system we would measure -- and the
20 station of Squamish comes to mind, we would measure
21 some fairly long charging sessions that you know the
22 person probably went for lunch or something like that.
23 And -- but I'm not sure how prevalent it is at this
24 time. But it's definitely something that we need to
25 look at in the evaluation, and there's various ways we
26 can do that.

1 existed to accommodate these rate designs, could you
2 please describe the type of data that BC Hydro would
3 need to determine those tiered rates and whether you
4 currently collect this type of data?

5 MS. JUBB: A: So the request is for what type of data
6 -- can you repeat the request?

7 MS. TRAN: Q: Yes, so for example Tesla's tiered rate
8 design is to charge customers a higher rate for all
9 the power that they draw, that the cars draw above 60
10 kilowatts and a lower rate when the car is drawing
11 power at lower than 60 kilowatts.

12 MS. JUBB: A: Yes.

13 MS. TRAN: Q: For the Electrify Canada's rate design
14 when the EV is plugged in to the station, the station
15 recognizes whether the car can actually take a maximum
16 draw of between -- if it's between 1 and 90 kilowatts,
17 then the lower rate is charged for the entire session
18 and that rate is still in a sense permanent. So it's
19 entirely time based. And if the car has a higher
20 capacity to draw energy higher than 90 and up to 350,
21 then the higher rate is charged for the entire
22 session.

23 And so, I'm trying to understand in a world
24 where Measurement Canada would not approve a measuring
25 device in time before your next evaluation report and
26 we might be looking at different rates to deal with

1 the question of fairness and allocation of cost, what
2 kind of data would BC Hydro need to be able to design
3 alternative more sophisticated rate designs and
4 whether that data is currently being collected?

5 MS. JUBB: A: So I'll speak about the data type of
6 information that we would need to design such rates,
7 but my understanding is that -- and perhaps Mr.
8 Papadoulis can then carry that on, is that the
9 Measurement Canada constraint applies to rates that
10 are based on the power draw of the vehicle.

11 Perhaps you can start with that.

12 MR. PAPADOULIS: A: Yeah. For the Electrify Canada
13 scenario, their rate is for the entire session. So it
14 doesn't change. So it's -- but I'll let Ms. Jubb
15 speak to the data. From the technology perspective
16 we'd have to look at the capabilities of our chargers
17 to see if they can do that and our network management
18 system provider as well. So that, I guess --

19 MS. TRAN: Q: And would your station be able to do
20 that, to communicate with the car?

21 MR. PAPADOULIS: A: It does now.

22 MS. TRAN: Q: It does now?

23 MR. PAPADOULIS: A: Yeah.

24 MS. TRAN: Q: So your stations are able to recognize
25 the maximum power that the car can --

26 MR. PAPADOULIS: A: Yeah, exactly.

1 MS. TRAN: Q: Thank you.

2 MR. PAPADOULIS: A: Yeah, it does that now. However,
3 the rate that we bill is hardcoded, it's fixed.

4 MS. TRAN: Q: Yeah, I understand.

5 MR. PAPADOULIS: A: It doesn't alternate. Right? So
6 that would be one element that would need to be
7 adjusted in our charger itself.

8 MS. TRAN: Q: Thank you.

9 MS. JUBB: A: So my understanding of the Electrify
10 Canada rate design is that the charging system
11 recognizes the max potential power draw of the
12 vehicle, and then the rate is based on that. Okay?
13 So if that were technically feasible, and I would rely
14 on my colleagues here to advise on that, then the type
15 of data that could inform a rate design decision would
16 be the power draw of the different vehicles that are
17 using our stations, understanding the range of peak
18 demand that they can draw, and then from there once we
19 know the peak demand, we can assess their demand
20 related costs and come up with a reasonable rate that
21 would vary based on the demand related cost of that
22 different types of vehicles could draw.

23 For simplicity, just like we discussed for
24 the streetlight service rate, we would likely group
25 into categories or a range of wattages, otherwise one
26 could have a proliferation of rates. So we might

1 logically say, like we did for streetlight, are there
2 five logical groupings of power draw that vehicles
3 fall into in that range, and then we would analyze the
4 demand related cost of serving that power level and
5 price on that basis.

6 So the data that we would require to do
7 that type of rate design would be definitely the power
8 draw of the vehicle, which I understand we collect.

9 **Proceeding Time 1:48 p.m. T52**

10 We have that and we'd want to compare that to the
11 demand related costs which our fully allocated cost of
12 service could help us with. So the electricity usage
13 data as well.

14 MS. TRAN: Q: So just so that I'm clear, for each
15 session that are currently going on with each of the
16 station, you do collect data per charging session, the
17 maximum power draw and the curve, how it behave?

18 MR. SEONG: Q: This is Mark Seong. Yes, we do collect
19 data from the individual charging sessions and we have
20 datas like, you know, the starting state of charge,
21 like percent value was at the start of the charge and
22 what it is at the end of the charge, and we do have
23 information on what the energy consumed is and such.

24 MS. TRAN: Q: So I think yesterday, and we heard it
25 again today, we heard that AddEnergie will add the per
26 kilowatt billing functionality in their system by the

1 spring of next year, 2022, at no additional cost to BC
2 Hydro. I just wanted to clarify if that additional
3 billing capability would also permit the
4 implementation of an alternative rate design such as
5 the one employed by Electrify Canada, for example.

6 MR. SIMMONS: A: Just a point of clarification. We
7 don't expect it to come at any additional cost to BC
8 Hydro. That's our expectation, although we don't have
9 a contract with them that says that that functionality
10 will be in place at no cost.

11 With respect to additional functionality,
12 beyond that we don't know at this point what
13 AddEnergie will be providing in the update coming this
14 spring, aside from their roadmap functionality which
15 is the addition of per kilowatt hour billing.

16 MS. TRAN: Q: Okay, thank you.

17 Now, I'd like to turn to interconnection
18 costs and I'll turn to question 6.1 of our Exhibit A-
19 13 where we had included a preamble there, an excerpt
20 from the Phase 2 report, Executive Summary of the EV
21 inquiry. And one of the recommendations was that
22 exempt utilities should be provided access to timely
23 and efficient interconnection services on the same
24 terms and conditions as non-exempt utility projects.

25 So the question was, if you could please
26 discuss how BC Hydro currently provides exempt

1 utilities with access to timely and efficient
2 interconnection services on the same terms and
3 conditions as non-exempt utility projects? Are you
4 able to comment on this, or answer this question?
5 This is a pre --

6 MS. JUBB: A: I can answer to the best of my abilities.
7 The one point of clarification I would like to ask is
8 in referring to the non-exempt utility project, that's
9 referring to BC Hydro's own.

10 MS. TRAN: Q: Yes.

11 MS. JUBB: A: It's spelled out, right? So our electric
12 tariff, section 8 of the electric tariff sets the
13 terms and conditions for any distribution customer to
14 be interconnected to this system. And I cannot
15 confirm that the terms and conditions are exactly the
16 same as for BC Hydro because under Section 8 of the
17 electric tariff, customers that want to connect to the
18 system pay the extension cost which BC Hydro also has
19 to pay the extension costs, so that aspect of it is
20 the same. However, customers are also entitled to a
21 contribution from BC Hydro, which is a payment that BC
22 Hydro provides to interconnecting customers based on
23 an estimate of the future revenue that that customer
24 will provide for ratepayers.

25 So for example, the maximum contribution
26 that BC Hydro will provide to a general service

1 customer who seeks to interconnect, it's \$200 per
2 kilowatt of estimated billing demand.

3 **Proceeding Time 2:03 p.m. T53**

4 So that is an example, that term and
5 condition clearly doesn't apply to BC Hydro. We don't
6 apply a BC Hydro contribution to BC Hydro, but we do
7 provide that payment to third parties that seek to
8 interconnect.

9 MS. TRAN: Q: Thank you. So now I'd like to turn to
10 the topic of fair market rates based on commercially
11 reasonable cost assumptions, and by that I mean rates
12 that will allow providers to recover their costs and
13 earn a return.

14 I think you mentioned yesterday, or it was
15 mentioned yesterday at transcript page 83, lines 21
16 and 24, that you've addressed questions 7.1 and 7.3 of
17 our Exhibit A-13, but I wasn't able to see the
18 responses to the 7 series question in BC Hydro's
19 commentary.

20 So I would like to get some specific
21 responses to the 7 series of questions. So if you
22 could turn your attention to that in Exhibit A-13.

23 MS. JUBB: A: Seven -- I've got that in front of me.
24 And 7.1 question asks:

25 "Does BC Hydro believe that its proposed
26 rates and the rates charged by other

1 operators are representative of fair market
2 rates on based on commercially reasonable
3 cost assumptions, i.e. rates that are able
4 to recover the basic capital and operating
5 expenditures?"

6 In our testimony and in Suncor's evidence
7 as well, the evidence is that the rates from fast
8 charging service cannot recover all capital and
9 operating expenditures. So that is -- while I don't
10 know all operators' business model, it does seem
11 apparent that it would be at least unusual that the
12 rates could recover the costs of the fast charging
13 service.

14 MS. TRAN: Q: Thank you. And so to continue on, just
15 before question 7.3 there were some other excerpts
16 from ChargePoint and Suncor, and for example
17 ChargePoint mentioned that given the current rate of
18 station utilization, the City of Vancouver's future
19 drivers cover on average 81 percent of its operating
20 cost, and this data point does not include amortized
21 capital costs. And then Suncor in Exhibit C-20-3
22 stated that,

23 "BC Hydro's rates have a disproportionately
24 negative impact on private EV charging
25 operators. BC Hydro's early offering of
26 free charging at its EV charges at a period
of time when the EV market was nascent put

1 downward pressure on the price that
2 privately owned EV charging operators, like
3 Petro-Canada could reasonably post."

4 In BC Hydro's rate application:

5 "Comparison are made with private operators
6 such as PetroCanada to determine the
7 proposed new rates for BC Hydro charger. By
8 implication, this assumes that PetroCanada
9 EV charging stations are currently operating
10 in a financially sustainable manner which
11 they are not."

12 So based on these two comments from
13 ChargePoint and Suncor, could you please discuss
14 whether BC Hydro still believes that by proposing
15 rates that it submits will fall within the range of
16 other fast charging operators, there is a limited risk
17 that BC Hydro's investment will not drive out private
18 investment overtime?

19 MS. JUBB: A: The question, as I read it, in 7.3 is
20 whether or not there is limited risk that BC Hydro
21 investments will not drive out private investments
22 over time. So it seems to be referring not to the
23 proposed rate, but rather to BC Hydro's investments in
24 fast charging infrastructure overall, as I --

25 **Proceeding Time 2:08 p.m. T54**

26 MS. TRAN: Q: So, let me rephrase it then. Does BC

1 Hydro believe that by proposing rates that BC Hydro
2 submits fall within the range of other EV fast
3 charging operators, there is limited risk that this
4 endeavour from BC Hydro will not drive out private
5 investment over time at those rates that BC Hydro
6 proposes?

7 MS. JUBB: A: BC Hydro's proposed rates, by falling
8 within the range of other operators we do believe that
9 does limit risk that the rate on its own would drive
10 out other private sector operators. And we'd also
11 like to reiterate the testimony from yesterday that
12 the rate was free for quite a long time and other
13 private operators, and a number of operators, came to
14 British Columbia and built operations here. So the
15 rate on its own doesn't appear to be a detriment.

16 MS. TRAN: Q: If I understood clearly, you confirmed
17 that there is a limited risk that BC Hydro's
18 investment in fast charging service at those rates,
19 there is a limited risk that it will stifle
20 competition?

21 MS. JUBB: A: I wouldn't characterize it that way.
22 What we've seen is that operators have come to our
23 service territory even while our service was free. So
24 that does not provide evidence that the rate that our
25 service is set at is driving other operators or
26 putting other operators at risk. So that is, in terms

1 of what I know of the market, I'm aware of that, that
2 the service was free and other parties still came to
3 the service territory.

4 And I also know that the rate we propose
5 falls within the rates of other operators, not all of
6 whom are utilities. And that should provide some
7 indication as well that the rate on its own isn't
8 going to impact private investment.

9 MS. TRAN: Q: So, but we have evidence here in this
10 proceeding from exempt utilities, such as Suncor. And
11 I think we probably skipped over one of the preambles
12 to question 7. So at pages 6 and 7 of Suncor's --
13 sorry. Well, one of the preambles to my question 7
14 was that Suncor stated that based on current demand
15 charges that fall into BC Hydro's large general
16 service category, the rate proposal would be crippling
17 to the profitability of private EV charging stations
18 that if forced to adopt a competitive charging rate to
19 that proposed by BC Hydro would not even be able to
20 recoup their BC Hydro utility charges before
21 considering maintenance, software support and capital
22 recovery. Consequently, there would no longer be any
23 incentive for private investment in EV charging
24 infrastructure in B.C. So, that is the evidence in
25 this proceeding.

26 Would you not agree that the rates

1 comparison exercise if rates of other providers have
2 not been adjusted to take into account the power level
3 of their stations?

4 MR. SEONG: A: This is Mark Seong. As I mentioned in
5 our testimony yesterday, we don't have any data on any
6 other power levels other than the 50 kilowatt, which
7 is the majority of our stations, that we can reliably
8 use, and apply adjustment factors to. And so in
9 absence of that, we use the best information that we
10 had to do the bill comparison within the different
11 power levels.

12 MS. TRAN: Q: But you've recognized yesterday that
13 without adjusting for power levels, and there are
14 different other variables that affect the amount of
15 electricity going into a car, using BC Hydro's data
16 that they collected on their own 50 kilowatt stations
17 in a one year period, would not apply to the
18 PetroCanada station or Electrify Canada or Tesla. And
19 so what was the purpose, what's the use of this bill
20 comparison if we actually cannot compare apples to
21 apples at the end of the day?

22 MR. SEONG: A: It was meant to be an illustrative
23 comparison. We don't have PetroCanada's data, we
24 don't have Tesla's data. All we have is our own data
25 that we can rely upon. And so during this proceeding,
26 we did receive -- I will go back to -- I think the

1 questions that BCUC asked was 9.2.1 in Exhibit A-13 I
2 believe. And where you asked us whether \$8
3 calculation we did for PetroCanada using our own
4 station information was fair, and there was a
5 submission from Suncor showing their own average
6 charging time of 25.12 minutes, which included -- and
7 their rate includes the GST and PST taxes.

8 And so we recalculated our bill comparison
9 using that average time that they provided, and then
10 adjusted our rates to include our tax of GST as well,
11 and so when you do that, the Petro bill comes out to
12 -- PetroCanada's bill comes out to \$6.80, and BC
13 Hydro's bill comes out to \$6.20.

14 MS. TRAN: Q: Thank you, and those would be comparable?

15 MR. SEONG: A: Correct. And that was possible because
16 we received that data in this proceeding. But
17 otherwise we don't have any data available to do any
18 other bill comparison otherwise.

19 MS. TRAN: Q: Thank you. You just mentioned quickly
20 that you apply GST of 5 percent on your rates, so you
21 don't apply the PST, correct?

22 MR. SEONG: A: That's correct.

23 MS. TRAN: Q: Thank you. So, also in series 9,
24 question 9.6 stated,

25 "If the permanent rates across fast charging
26 providers cannot be readily compared unless the

1 maximum power level at the station is the same,
2 please discuss which other metrics should be
3 considered by the BCUC to ensure that EV fast
4 charging rates are comparable."

5 And at page 85 lines 14 to 19, Ms. Jubb, I think you
6 mentioned,

7 "And we were asked to suggest some standard
8 metrics to help compare charging rates
9 across providers, but we really don't have a
10 set of metrics that we can suggest given the
11 variety that's out there."

12 **Proceeding Time 2:18 p.m. T56**

13 So I'd like to turn to the topic of demand
14 charges. And that's my preamble to my next question
15 on demand charges.

16 So the transcript is page 196, lines 15 and
17 16, and the question will be for you, Mr. Papadoulis.
18 Yesterday you've confirmed that if you added the three
19 50 kilowatt stations to a site that already had one 50
20 kilowatt station, you now have the potential for 200
21 kilowatt of demand, correct?

22 MR. PAPADOULIS: A: Theoretically that's correct, yes.

23 MS. TRAN: Q: Similarly when BC Hydro starts installing
24 dual 100 kilowatt stations, you will also have the
25 potential for 200 kilowatt demand, correct?

26 MR. PAPADOULIS: A: Theoretically that's correct.

1 MS. TRAN: Q: Can you confirm that currently BC Hydro
2 calculated its electricity cost components based on a
3 single station per site?

4 MS. JUBB: A: I can confirm that when we assessed the
5 electricity costs and when we assessed where the
6 chargers -- where the service fits in our general
7 service, we assessed it at the level of the charger as
8 that is where the service is provided. So that aligns
9 -- the 50 kW service then aligns with medium general
10 service and the 100 kW charger aligns with medium
11 general service and the 25 with small.

12 MS. TRAN: Q: Thank you. So is it my understanding
13 that BC Hydro plans to expand most single sites to
14 have another station and to install dual station at
15 all the new sites?

16 MR. SIMMONS: A: I can confirm that -- this is Greg
17 Simmons. I can confirm that our standard for new
18 sites is to have dual chargers and we are in the
19 process of expanding existing single charging stations
20 to dual charger stations. The caveat to that is just
21 some of the sites are unable to accept dual chargers.
22 There is just not enough parking.

23 MS. TRAN: Q: I understand that, thank you. So if two
24 stations on one site are used simultaneously, are BC
25 Hydro's electricity costs calculated based on the
26 additive monthly demand peak which could be higher

1 An individual customer or site or facility,
2 particularly if it has a load shape that's very
3 different from the average, their demand related costs
4 could be quite different than what's in the tariff.

5 So although we've used the tariff charges
6 to represent electricity related cost recovery, the
7 actual demand related cost, that is the subject of the
8 fully allocated cost of service. And in doing that I
9 expect we would still want to understand it on a site
10 specific basis, we'd want to understand the demand
11 related cost of a 50 kW charger -- I misspoke in terms
12 of referring to it on a site specific basis. I expect
13 we'd still want to understand it on a charger level,
14 to come up with -- I think a useful thing to
15 understand is what is the demand related cost of our
16 50 kW stations? What is it of our 100 kW stations? I
17 think that would be an interesting and helpful thing
18 to understand. So I expect we'd still do it at the
19 charger level.

20 MS. TRAN: Q: So I'll try to rephrase then. If I was
21 looking to charge my car at a PetroCanada station and
22 they normally have two chargers, and I drive up to the
23 station and there's another car using the other
24 station and we both plug at the same time, and those
25 stations vary in power up to 350 kW, would BC Hydro
26 bill PetroCanada or Suncor based on the additive

1 monthly peak demand that would've been drawn at that
2 moment where two cars were charging simultaneously or
3 would it be basing the demand charges in the utility
4 bills to only one single station out of the two
5 regardless of whether these two stations can be used
6 simultaneously?

7 MS. JUBB: A: BC Hydro would bill a customer in
8 accordance with our electric tariff. So if the
9 customer's facility -- all the loads on the facility,
10 which could include whatever end uses they may have,
11 if all of those loads exceeded 150 kW of peak demand
12 or had energy consumption greater than 550,000
13 kilowatt hours in a year, the available service is
14 large general service.

15 MS. TRAN: Q: Now, so and the utility bill in a month
16 would reflect -- so the demand charges would apply to
17 the additive monthly peak demand, these two cars
18 charging at once?

19 MS. JUBB: A: Any customer's bill under large general
20 service or medium general service, the demand charge
21 applies to the billing demand, which is the highest kW
22 demand in the billing period for everything basically
23 behind that meter or that account.

24 MS. TRAN: Q: So coming back to the future, new dual
25 100 kilowatt stations that BC Hydro might be
26 installing in the near future, would you calculate the

1 demand charge based on all the load that would happen
2 simultaneously, two cars charging up to 100 kW, plus
3 heating, lighting, and ancillary loads, and be
4 applying the tariff in a similar manner?

5 MS. JUBB: A: I may have got a bit lost. So BC Hydro's
6 proposed rates are time based, they don't have a
7 demand charge. Maybe I've misunderstood the question.

8 MS. TRAN: Q: The stations, like the 100 kilowatt
9 station, BC Hydro proposes to apply the medium general
10 service which has a demand charge, correct? The rate
11 schedule for the 50 kilowatt and 100 kilowatt stations
12 are based off the medium general service rate
13 schedule.

14 MS. JUBB: A: We consider medium general service to be
15 relevant to those rate schedules.

16 MS. TRAN: Q: So I'm trying to understand, if BC Hydro
17 builds new dual site stations or new dual stations
18 going forward and installed two 100 kilowatt stations,
19 there is the possibility that if those two stations
20 are used simultaneously, the peak demand would go
21 above 150 kilowatts, which would place this site into
22 the large general service with higher demand charge,
23 correct?

24 MS. JUBB: A: If we considered the service to be at the
25 site level with multiple stations in a site and the
26 power draw was over 150 kW, then large general service

1 applies.

2 **Proceeding Time 2:28 p.m. T58**

3 MS. TRAN: Q: Thank you. So would it be possible then
4 that the proposed rate of 27 cents per minute for the
5 100 kilowatt stations, which would be in effect for
6 three years, and capture the future in which BC Hydro
7 might install those new dual 100 kilowatt stations.
8 Would it be possible then that the proposed rate of 27
9 cents per minute may not be sufficient to recover BC
10 Hydro's electricity cost at a 5.5 percent utilization
11 rate going forward?

12 MS. JUBB: A: It is possible that the proposed rates do
13 not recover demand related costs. That is possible.
14 And that certainly is going to be the subject of the
15 evaluation, and I think an interesting -- an important
16 part of that study.

17 MS. TRAN: Q: Are demand costs or demand charges within
18 the medium general service or large general service,
19 would they not be part of the electricity cost?

20 MS. JUBB: A: The demand charges are a representation
21 of demand costs across, like on average, across a
22 group of customers. But the actual cost that an
23 individual incurs within -- let's say they're a medium
24 general service customer, their billed based on medium
25 general service rate, as per the electric tariff. But
26 the actual cost of serving that individual customer,

1 it may be quite a lot higher or lower than the charges
2 in the tariff. They won't necessarily line up for any
3 individual customer because the charges in the tariff
4 are -- first of all, they're averages over thousands
5 of customers. And, second, they, like all rate
6 design, they go through a Bonbright process where you
7 consider things like customer understanding and
8 acceptance, practical to administer. So I think it's
9 safe to say that no -- there's no rate in the electric
10 tariff that perfectly matches the cost to serve that
11 one customer.

12 MS. TRAN: Q: I was just trying to understand that one
13 of the goals in designing this rate was for BC Hydro
14 to recover its electricity cost, wasn't it?

15 MS. JUBB: A: It is. It is our aspiration that it
16 would recover at least electricity related costs, yes.

17 MS. TRAN: Q: And as part of the responses to IR 1 in
18 attachment 1 to question or IR 7.2, I believe, there
19 was an Excel spreadsheet where you provided the
20 calculations behind how you derived the 21 cents per
21 minute for the 50 kW station and the 27 cents per
22 minute for the 100 kW stations.

23 So I'm just trying -- and in that
24 spreadsheet those electricity cost were comprised of
25 demand charges and energy charges. And now we've also
26 explored the basic charge. So those three components,

1 would you not agree, are the electricity cost that BC
2 Hydro is trying to recover with their proposed rate?
3 MS. JUBB: A: They're a -- they're not necessarily the
4 true cost of service. The true cost of service,
5 that's the subject of the evaluation. But they are
6 the charges that reasonably represent, based on the
7 information we have now, that reasonably represent the
8 cost of electricity. So they're a reasonable proxy.
9 But how close they are to the true cost of service,
10 that's yet to be determined. And I would acknowledge
11 that, you know, under recovery of demand related costs
12 is an issue with low load factor loads, which could be
13 the case for electric vehicle fast charging. So,
14 there is a possibility that there rates will under
15 recover demand related cost, and that will be the
16 subject of the evaluation.

17 **Proceeding Time 2:33 p.m. T59**

18 MS. TRAN: Q: So, I think I've understood earlier that
19 for an exempt utility you would bill that customer
20 based on the monthly peak load that occurred at one
21 point in time, considering the use of the station and
22 the ancillary load. And this is not exactly how you
23 would approach the situation with BC Hydro where you
24 prefer to focus the rate design on a single station,
25 even though there might be more stations on a site.
26 So I think the -- would you not agree that classifying

1 the service into the appropriate general service rate
2 schedule to reflect the realistic demand charges could
3 be a metric that the BCUC could consider to ensure
4 that EV fast charging rates are comparable?

5 MS. JUBB: A: BC Hydro does suggest that our service
6 fall within the applicable general service rate
7 category of another comparable provider, being either
8 small general service, or medium general service.

9 MS. TRAN: Q: Then help me understand why if BC Hydro
10 installed two 100 kilowatt stations going forward,
11 with the potential for additive monthly demand peak of
12 200 kilowatt, why would that not be classified into
13 the large general service? And using the large
14 general service rate schedule as a basis to calculate
15 the rates to recover the electricity cost component?

16 MS. JUBB: A: So, I think I understand there is two
17 possible questions here, if I'm understanding. One is
18 how is the service appropriately classified or
19 categorized. The service the customer receives is
20 from one charger. They don't receive service from a
21 whole site. They receive it from one charger, and so
22 we believe the service should be defined at the
23 charger level, because that is how the customer
24 interacts with the service.

25 So, in that respect, we believe it is
26 appropriate to categorize the, for example, the 25 kW

1 as a small general service.

2 A separate issue is whether the use of that
3 rate schedule as a proxy for the electricity related
4 costs is accurate, or should other analysis be done?
5 And I think that is a separate issue from the
6 classification and whether or not the consideration of
7 the electricity costs accurately reflects or fully
8 reflects the costs of electricity that will actually
9 be incurred. And I would note that the rate schedule
10 is not going to exactly match those electricity
11 related costs. We don't expect it to. It's a
12 reasonable proxy but we don't expect it to actually
13 match.

14 MS. TRAN: Q: Thank you. I'd like to go to the next
15 topic, which is --

16 THE CHAIRPERSON: So, excuse me, sorry, Ms. Tran.

17 MS. TRAN: Thank you, sorry.

18 THE CHAIRPERSON: Yeah, just wondering how much more?
19 Because we are getting to be a good time for a break?
20 But if you're close to done we'll -- you're not.
21 Okay, so do you mind if we break now?

22 MS. TRAN: No, I don't mind.

23 THE CHAIRPERSON: Thank you. We'll take 15 minutes,
24 come back at 10 to, thank you.

25 (PROCEEDINGS ADJOURNED AT 2:36 P.M.)

26 **(PROCEEDINGS RESUMED AT 2:53 P.M.)**

T60/T61

1 THE CHAIRPERSON: Thank you, please be seated.

2 Do we have the remote audience back with
3 us? As far as we know? Ms. Worth, are you there? Oh
4 good.

5 MS. WORTH: Yes, I am.

6 THE CHAIRPERSON: Oh good, we've got two responses,
7 good. All right.

8 Thank you, please go ahead.

9 MS. TRAN: Thank you.

10 MS. TRAN: Q: So I'd like to move on to another topic,
11 which is an alternative proposal for rates not being
12 fixed for three years. So, in response to BCUC IR 6.1
13 of Exhibit C20-10, Suncor stated,

14 "If non-exempt utilities are required to
15 follow a regulatory proceeding to enable
16 price changes, Suncor recommends that the
17 BCUC use the proceeding to set a minimum and
18 possibly a maximum rate within which non-
19 exempt utilities must operate their EV fast
20 charging service and require non-exempt
21 utilities to report annually with evidence
22 demonstrating their diligence in ensuring
23 maximum revenue directly from the EV
24 charging network to minimize the
25 subsidization of applying losses to all
26 ratepayers. This would include a system of
surveying competitor pricing to determine

1 the appropriate rate that could have been
2 set to maximize revenue. Given the
3 differences in customer needs, vehicle
4 capability and individual experience, BCUC
5 should not set a specific rate that is
6 locked for the proposed three years."

7 And then in response to BCUC IR 7.2 in the
8 same exhibit, C20-10, Suncor also stated that,
9 "Suncor agrees that calculations are
10 difficult without known utilization rates.
11 However, a minimum rate type structure could
12 support dynamic adjustment based on a
13 rolling monthly report for utilization."

14 So, I'd like to ask if you could please
15 discuss the feasibility of having a minimum and
16 possibly a maximum rate within which BC Hydro could
17 adjust its rate as frequently as needed based on
18 competitors' pricing, monthly utilization rate to
19 maximize revenue and minimize cross subsidization.

20 MS. JUBB: A: It's an interesting concept. One of the
21 considerations that we have, especially going in as
22 this is a new service, is wanting to be able to
23 provide the customer some cost certainty and not
24 putting a barrier to utilization in the form of a rate
25 design that changes, where the customer may not know
26 what to expect to what their bill might be at any
 given time.

Proceeding Time 2:56 p.m. T62

1
2 When I think about other rate designs that
3 we have that change unexpected to the customer, and we
4 have a few rate designs in the tariff that, for
5 example, follow the mid-C price. Those customers that
6 use those rate designs, first of all, they are
7 generally optional. The customer can choose whether
8 or not they want to be exposed to price in volatility
9 and risk. And secondly they're our most sophisticated
10 customers. They are large business customers, they
11 have dedicated energy managers, and they're prepared
12 by opting into that rate to be willing to accept that
13 it could move on them, and track it, and respond to
14 it.

15 So, we think there is a role for those
16 types of rate designs that have basically variable
17 pricing. For the largest, most sophisticated
18 customers, on an optional basis, for the fast charging
19 market, those are generally residential type
20 customers. And I think that at this point, especially
21 given where we are in the evolution of this service,
22 having a simple design where there is some cost
23 certainty. It was \$6 last time I charged, I can
24 reasonably expect it to be not 6 -- 6 again next time,
25 not some other unexpected price. I think it is
26 prudent to stay with that approach at this time.

1 MS. TRAN: Q: Thank you. And so, on another note, what
2 about if BC Hydro were asked to index their rates to
3 the market average, for instance, in B.C. or in
4 Canada, could that be another possible alternative?

5 MS. JUBB: A: Well, we do have those rate designs, as I
6 mentioned, that are indexed to market for the largest
7 industrial customers. I think for the reasons -- well
8 there is two -- I described the reasons why we don't
9 think that's the way to go for fast charging customers
10 right now.

11 And the second caution I would provide is
12 that in the cases where we have rates that are indexed
13 to a market, it's been -- in every proceeding, and in
14 the customer feedback we get, that market should be
15 transparent. They want to be able to look up that
16 market price and see for themselves that it is \$3, or
17 \$4. What they don't want is for it to be a market
18 price that is something that BC Hydro has developed
19 that we know that others cannot independently verify.

20 So right now, there is -- I think there is
21 two -- the main issue with that concept I think is,
22 it's not the right time, and it's not the right
23 customer group to impose price volatility or
24 uncertainty. And then the other issue is, do we have
25 a transparent market that's independently verified
26 that customers could point to, and that the BCUC could

1 be confident was accurate. And then we'd have to
2 think about what kind of adder might be appropriate.

3 So, the concept itself is interesting, and
4 we've used it for industrial rates. We are certainly
5 not there yet, on this fast charging rate to be able
6 to go down that path.

7 MS. TRAN: Q: Thank you.

8 THE CHAIRPERSON: Ms. Tran, if you are finished with
9 this question, I wouldn't mind adding -- asking a
10 follow up question?

11 MS. TRAN: Yes, please go ahead.

12 THE CHAIRPERSON: So, there has been a lot of talk
13 about Bonbright principles, and comparisons to the
14 residential rate class, and Ms. Jubb you were just
15 making those comments that these are residential
16 ratepayers and they're used to stable prices, and so
17 on.

18 So, it seems to me that there is an awful
19 lot of residential customers in the province that own
20 vehicles that visit gas stations every day, and are
21 faced with a different price for their gasoline. And
22 they are completely able to deal with variability and
23 variations in transportation fuel costs. And they
24 don't really think of their fuel in the same way they
25 think of their residential electricity.

26 So, I'm wondering why that isn't a

1 option of opting into, say, market prices. Alberta is
2 an example. So I think innovation in rate design is a
3 good thing and in some cases overdue in electricity
4 sector. And at the same thime I guess I'm
5 conservative it being a new service.

6 THE CHAIRPERSON: No, I understand. And just to be
7 clear, I'm not suggesting to adopt a gasoline pricing
8 model and, you know, have intraday swings and daily
9 changes, that's not my suggestion. But I am pointing
10 out that people are used to variability in their
11 transportation fuel costs and don't -- and they may
12 not necessarily expect the same kind of stability that
13 they have with their residential rate.

14 MS. JUBB: A: That would be a good line of exploration
15 for customer research to explore.

16 THE CHAIRPERSON: Yes. Thank you.

17 Thank you.

18 MS. TRAN: Thank you.

19 MS. TRAN: Q: So now I'd like to explore the topic of
20 the rate design assumptions that were used to
21 determine the electricity -- the proposed rate --
22 sorry, to determine the proposed rate for a 100
23 kilowatt station. So BC Hydro has stated that it has
24 no usage date available for the 100 kilowatt station,
25 correct?

26 MR. SEONG: A: It's Mark Seong. Yes, that's correct.

1 MS. TRAN: Q: So I'm just trying to understand, I think
2 in your application you mentioned that you currently
3 have one 100 kilowatt charging station which is
4 undergoing a period of testing. Could you explain
5 what the testing involves and whether through testing
6 BC Hydro could get data with which to adjust its 50
7 kilowatt data for the purpose of calculating its rate?

8 MR. SIMMONS: A: This is Greg Simmons. So the testing
9 for this, it's a AddEnergie 100 kilowatt charger. The
10 testing is undergoing -- or is being undertaken at
11 Powertech Labs, which is a subsidiary of BC Hydro and
12 is located in Surrey. We intend to deploy that
13 station in August, so, and it will be publicly
14 available in August is the target.

15 MS. TRAN: Q: But so -- okay. But through the testing
16 you wouldn't be able to get some data to --

17 MR. SIMMONS: A: Well, it hasn't been publicly
18 accessible. It's been in a lab type setting.

19 MS. TRAN: Q: Okay, okay.

20 MR. SIMMONS: A: Yeah.

21 MS. TRAN: Q: Thank you. So I'd like to turn my
22 attention to question 17.1 in Exhibit A-13. The
23 question was could you please confirm that BC Hydro
24 can generally expect to deliver more electricity to an
25 EV connected to a 100 kilowatt station for 28.6
26 minutes than if it were connected to a 50 kilowatt

1 station?

2 MR. SEONG: A: This is Mark Seong. In the 100 kilowatt
3 station versus 50 kilowatt station, what we expect,
4 what we know is that -- well, we expect that the peak
5 demand would be definitely higher in the 100 kilowatt
6 station versus 50 kilowatt stations because we would
7 assume that the cars -- or electric vehicles with
8 higher charging capacity will charge at the 100
9 kilowatt station versus 50 kilowatt station.

10 **Proceeding Time 3:06 p.m. T64**

11 In terms of the actual energy consumption,
12 we are not -- we can't say for sure how much that
13 would vary by. Again, because we don't have any
14 experience with the 100 kilowatt stations, they could
15 be coming in charging for a very short time and
16 leaving or they could be charging for a longer period
17 of time. We just don't have any data to verify that.

18 MS. TRAN: Q: Yeah, but if you were to maintain as a
19 constant the average session length, for example the
20 28.6 minutes that's been used in the application, so
21 that length of time is kept constant, if you were to
22 plug in a 100 kilowatt station versus a 50 kilowatt
23 station it's generally expected that you would get
24 more electricity at the 100 kilowatt station, assuming
25 the car is capable of charging at this power level.

26 MR. SEONG: A: So, for the -- when the time is constant

1 at 20 point -- for example our average is 28.6
2 minutes, so that's an average. In a single, a single
3 scenario where a car with higher capacity with a
4 battery at the lower state of charge comes into a 100
5 kilowatt station and charges for 28.6 minutes versus
6 that same car, same state of charge, same temperature
7 goes to a 50 kilowatt station, that's likely the
8 scenario. But, again, these numbers are averages so
9 we don't know what the charging characteristics and
10 the user behaviour will be like at the 100 kilowatt
11 station as an average. We don't -- so we can't say
12 for sure what that number would turn out to be, we
13 just don't have any way to verify it at the moment.

14 MS. TRAN: Q: But on the balance of probabilities, like
15 if we were to take into account, you know, a lot of
16 scenarios, there is a general tendency that there is
17 more electricity that would come out of the station if
18 the power station has a higher capacity than 50. So
19 I'm just trying to understand if there would still be
20 a way without having hard data to still adjust the
21 calculations that underpin the proposed rate of 27
22 cents per minute. Because that 27 cents per minute is
23 calculated based on data that was obtained through a
24 different type of charging station. So I'm just
25 trying to see whether there would be a manner of
26 adjustment that could be made.

1 MR. SEONG: A: This is Mark Seong again. So, the only
2 known factor for us at this point between the two
3 power levels, the 50 and 100 kilowatt, is that peak
4 demand itself. The peak demand at a 100 kilowatt
5 station, there is a scenario where the demand can
6 reach 100 kilowatt. And so we put that into the
7 proposed rate calculations, setting the peak demand at
8 100 kilowatt. And the same with 50 kilowatt chargers
9 -- or charging stations, that we expect that the peak
10 demand for that station would be 50 kilowatt, because
11 that's how much the station can dispense. And so we
12 set our proposed rate based on that.

13 Again, in terms of energy consumption we
14 just don't know. And adjustment factors, we don't
15 have any data to calculate that nor verify that and it
16 would be unfair to put an adjustment factor that we
17 can't verify nor calculate. Hence, acknowledging that
18 50 kilowatt station data may not reflect the usage of
19 25, 100 kilowatt station users and charging
20 characteristic, it's the best we've got and that's
21 hence we used the 50 kilowatt data which has several
22 years of data that's clean and reliable and verified.

23 MS. TRAN: Q: Yeah, I understand. So coming back to
24 this proposal where maybe there could be a band within
25 which BC Hydro could adjust its rate maybe as data is
26 obtained. As I understand, the first 100 kilowatt

1 station will be installed later this summer. And as
2 BC Hydro rolls out more 100 kilowatt station, you will
3 be able to collect more data, correct? On the 100
4 kilowatt station.

5 **Proceeding Time 3:11 p.m. T65**

6 MR. PAPADOULIS: A: Jim Papadoulis. I think just, you
7 know, augmenting my testimony from yesterday where I
8 stated that the majority of vehicles right now aren't
9 charging beyond, on average, 30 kilowatts per session.
10 So even if we put in 100 kilowatt charger, you know,
11 by balance of probability, to steal your term, it
12 wouldn't be much more than that. Because there's very
13 few vehicles on the road today that can take 100
14 kilowatts. Right? That's just the nature of the
15 marketplace.

16 So if we're talking about theoretical
17 models, basing a rate on one charger with a population
18 of vehicles that can't charge beyond 30, you know,
19 that just states the assumptions of the model and
20 that's what you're going to get out of it. So.

21 MS. TRAN: Q: Yeah, I recall, I believe Suncor has
22 provided a response to a question that I haven't
23 offhand -- on hand, of a list of models, recent models
24 and make of EVs that were actually capable of charging
25 at higher rates than 30 kilowatts.

26 MR. PAPADOULIS: A: Correct, I'm familiar with that

1 evidence. I've gone through it. But what Suncor
2 didn't provide is how many of those particular
3 vehicles are on the road today, and the number is very
4 low.

5 MS. TRAN: Q: Okay, thank you. So I'd like to now
6 turn the attention to the 25 kW station. A similar
7 line of questions, but I think I've read somewhere
8 that you have a few of those stations already
9 operational, correct? I think I have seen that in
10 Attachment 1 to BCOAPO IR 1.1, and I don't know the
11 exhibit number, I'm sorry. So there was one station
12 in Hope that is operational since October 30, 2015,
13 another one in Squamish in operation since November
14 2016 and another station in Hope in operation since
15 November 2019.

16 So would it be possible for BC Hydro to use
17 the data collected at the 25 kilowatt station to
18 adjust the 50 kilowatt data to recalculate its
19 proposed rate for the 25 kilowatt station?

20 MR. SEONG: A: This is Mark Seong. I touched up on
21 that topic in yesterday's testimony. I'll give a
22 little more background and detail on that one.

23 Those four, three or four sites that --
24 three sites that was in the BCOAPO IR -- sorry, BC
25 Hydro's response to BCOAPO IR, I believe it was 1.2,
26 those stations initially started as 50 kilowatt

1 stations, and then as they came to end of life, we
2 could not replace it with another 50 kilowatt station
3 due to voltage issues at the site, and so we replaced
4 them with a 25 kilowatt stations which into place in
5 the spring of this year, and so we currently don't
6 have actual data of that -- well, we have very limited
7 data on the 25 kilowatt stations that can be used for
8 this analysis.

9 And I kind of touched up on yesterday that
10 we should have explained that better in our IR
11 response that although the sites have been in place
12 since 2015, 2017, 2019, the 25 kilowatt station itself
13 has only been there for just a couple -- a few months.

14 MS. TRAN: Q: Thank you, that clarifies it. So did I
15 just hear that those sites started as 50 kilowatt
16 stations but those stations reached the end of their
17 life?

18 MR. SEONG: A: Mark Seong again. Perhaps end of life
19 was maybe not the right characteristic, or terminology
20 for that. It was the assets were switched out. I'm
21 not sure of the exact reasoning for switching them
22 out, but they were switched out spring of this year.

23 MS. TRAN: Q: Thank you. So you can't confirm that
24 they reached the end of their life after a few years
25 of operations.

26 MR. SEONG: A: That's correct. The "end of life" term

1 is probably not the correct term for me to use. The
2 assets were switched out.

3 MS. TRAN: Q: Thank you.

4 **Proceeding Time 3:16 p.m. T67**

5 MR. SIMMONS: A: I'll just add that these assets for
6 all intents and purposes were at the end of their
7 life. They were relatively new assets that were
8 proving to be very problematic from an operating
9 perspective. They ran on 208 volt circuits and we had
10 13 in total in our fleet. And we found that the
11 operating costs and issues and emergency callouts were
12 so significant that it made economic sense to take the
13 assets out of service and replace them.

14 On a number of these sites, and so we have
15 Squamish which I talked about yesterday, Squamish
16 being a site that we could not expand given its
17 current footprint, to two 50s, and so we had found an
18 alternate site and then we had talked to Electrify
19 Canada that wanted that site in Squamish. Similarly,
20 same thing for Hope. And so both of those have 25
21 kilowatt stations there. One of them has two, I'm not
22 sure whether it's Hope or Squamish.

23 The other site is in West Vancouver. And
24 we have a 25 kilowatt site there that's on, I believe,
25 Bruce Street in Horseshoe bay. And that particular
26 location we wanted to expand it, however the City of

1 West Vancouver is doing some changes to the area in
2 Horseshoe Bay and wanted us to wait until -- so that
3 we can integrate the expansion of that particular
4 station with the work that they want to do on the
5 streetscape there. And so for the interim period we
6 did install an ABV 25 kilowatt charger.

7 MS. TRAN: Q: Thank you. Just now I'd like to turn to
8 one of the special condition, Special Condition 6 I
9 believe. And in question 33.1 in Exhibit A-13.

10 MS. JUBB: A: Can you repeat the question number,
11 please?

12 MS. TRAN: Q: 33.1.

13 MS. JUBB: A: Thank you.

14 MS. TRAN: Q: There is a preamble there but I won't
15 repeat it, I think it's in the question too. So the
16 question was, if you could please clarify how if a
17 customer had technical issues to connect to local
18 cellular network for payments how that customer would
19 have been able to activate the charging session.
20 Yeah.

21 MR. SIMMONS: A: I can answer that. And I'll give you
22 -- there's been three incidents where we've initiated
23 a charging session and waived the fees associated with
24 it. And I have the detail on two of them. And it
25 might be most instructive to talk through it in an
26 example.

1 And so in the one case the customer was in
2 Manning Park. They could not get cellular service on
3 their network in Manning Park and so they could not
4 initiate a charge. So they called our call centre,
5 and there's a routine, processes, that the call centre
6 agents have to go through asking them. And if it's a
7 safe -- viewed as a safety issue, they will allow the
8 charge to occur. This particular individual was
9 essentially stranded in Manning Park. The call came
10 through the hotel there and they used the payphone in
11 the hotel and then run out to the car and --

12 MS. TRAN: Q: I was going to ask how did they call.

13 MR. SIMMONS: A: Yeah. And so that -- and so really
14 what happens in the call centre is the duty manager
15 will make the call on whether or not they should allow
16 a charge. And, again, it's generally a safety issue.
17 And so this woman was otherwise stranded. She had 8
18 percent charge.

19 The other example is it was an individual,
20 same situation. There was a potential of being
21 stranded there. They did not have a BC Hydro RFID
22 card nor did they have the app. But they did have
23 sufficient cell service to actually make a call, but
24 they didn't have enough bandwidth to download the app
25 onto their smart phone and then enter their credit
26 card information. And after numerous tries it just

1 And so that BC Hydro would require more
2 than just this year of data to support a potential
3 redesign in 2024. However, I think I've also heard
4 that BC Hydro would consider filing the evaluation and
5 application for repricing early, or earlier, if there
6 was a significant change, such as the ability to
7 charge by kilowatt hour, and kilowatt, that this type
8 of evolution would trigger a serious consideration of
9 filing early.

10 So, could you please clarify why the issue
11 of this year being an outlier year in terms of data,
12 perhaps may no longer be an issue if Measurement
13 Canada were to approve a DC measuring device next year
14 in 2022? In other words, if that trigger occurred,
15 and BC Hydro would file for repricing early, would it
16 base that repricing application on this year's data?

17 MS. JUBB: A: If this year turns out to be an outlier,
18 and maybe this is the new normal, or maybe it's not.
19 So, if the year does turn out to be an outlier, we
20 would have to weigh that against what could
21 potentially be a very impactful change of being able
22 to move to electricity-based rate designs. We know
23 there is a lot of interest in electricity-based rate
24 designs, we expect they could improve performance on
25 fair allocation of costs.

26 So, we would have to weigh that. We don't

1 have -- you know, we're missing strong data, and yet
2 maybe there is an opportunity here that is worth
3 pursuing if the Measurement Canada approvals come
4 through.

5 So, that's a trade-off consideration, and
6 I'm not sure how fast we can expect those Measurement
7 Canada approvals to come through. But, I believe that
8 is a significant enough change in our abilities that
9 we would weigh it against the possibility of not
10 having adequate or sufficient data that we might like
11 to have.

12 MS. TRAN: Q: Thank you. I'd like to turn to -- I
13 guess I'm going backwards, but question 35 on the
14 induced effect in Exhibit A-13. I won't talk about
15 the E3 modelling report today, we've discussed that
16 yesterday. But I'd just like to talk about a response
17 that BC Hydro gave to a BCUC IR in the first round of
18 IRs, which is in the preamble to question 35.

19 So, in response to BCUC IR 15.3, BC Hydro
20 stated that,

21 " BC Hydro's investment in fast charging service
22 is expected to support electric vehicle adoption,
23 which should help increase the size of the fast
24 charging market overall."

25 And then a bit later,

26 "Electric vehicle adoption in turn is expected to

1 benefit all BC Hydro's ratepayers, in the form of
2 increased electricity sales and revenue."

3 And another preamble of this question 35 is
4 that -- I believe I was referring to an exhibit that
5 surfaced through the BCUC EV Inquiry into the
6 regulation of EV charging service in the Phase I. And
7 so, the B.C. -- or the Ministry of Energy, Mines and
8 Petroleum Resources stated in one of their exhibits
9 that a public utility may be able to demonstrate that
10 the cost of public EV charging infrastructure can
11 appropriately be recovered from revenue obtained
12 through electricity sales at all EV charging stations
13 within their service territory, i.e., through both
14 public and private level 1, 2, and 3 charging stations
15 combined.

16 **Proceeding Time 3:26 p.m. T68**

17 So, the first question 35.1 was just asking
18 to comment -- asking BC Hydro to comment on whether it
19 agrees with the statement made by the Ministry of
20 Energy, which I just read, for instance?

21 MS. JUBB: A: We do agree that a public utility may be
22 able to demonstrate that the costs would be associated
23 with revenues from charging elsewhere. The quote, it
24 does use the term "may" and I think that speaks to not
25 the question of the concept, the concept that electric
26 vehicle infrastructure investment is going to

1 encourage electric vehicle adoption, which is going to
2 lead to an increase in revenue. We certainly don't
3 dispute that. We believe that to be true.

4 The "may be able to demonstrate," well that
5 is the measurement challenge of measuring that with a
6 level of confidence that you can say, "This is the
7 precise effect." And that's the part that, yes, we
8 may -- it's possible that a public utility may be able
9 to demonstrate that. The effort or costs in that, in
10 verifying it, is -- could be considerable. But we
11 certainly don't disagree with the principle or the
12 concept that electric vehicle adoption can be
13 encouraged through public charging infrastructure and
14 that that would be to the benefit of all ratepayers.

15 MS. TRAN: Q: Thank you. So I think -- and I've heard
16 you and Ms. Simmons both said that BC Hydro would not
17 necessarily be amenable to conduct a study to quantify
18 that, that effect, because it's costly and in any case
19 at the end of the day you might get a coefficient
20 which is not significant. However, perhaps would --
21 or would you believe that the effort would be
22 worthwhile given that it could potentially demonstrate
23 that there is in fact no cross-subsidization, which is
24 a topic that turned out to be particularly important
25 to many participants?

26 MS. JUBB: A: I'm not sure that it could demonstrate

1 that question, because even the E3 study, the
2 potential study, they looked at forecast future
3 scenario. So they're looking at a longer term effect.
4 And I believe that what we're describing here is a
5 longer term effect, that the investments today could
6 result in increased revenues in the future. But I'd
7 be surprised if we were able to demonstrate that there
8 was -- that that effect was concurrent with the
9 investment.

10 So in other words, the investments most
11 reasonably have to be spent and covered and subsidized
12 to some extent by other ratepayers today and there may
13 be future benefits that arise. So I'm not sure the
14 study could demonstrate that there's no cross-
15 subsidization. I think in the current period some
16 cross-subsidization is the case.

17 MS. TRAN: Q: Thank you. And I guess I just have one
18 last question on Exhibit B-14 that was filed this
19 morning. And I know we've talked about this, these
20 tables at length already, so I just have a quick ask.
21 And it would be -- if it would be possible for you to
22 recalculate perhaps a scenario 1A where included in
23 the electricity cost would be those of scenario 1 and
24 also including the electricity not dispensed and the
25 basic charge. So that would be all included in the
26 electricity cost.

1 MR. SEONG: A: This is Mark Seong. Yes, we can do that
2 and I can add that scenario into the live model that
3 I'll be providing. I can do that at the same time.

4 **Information Request**

5 MS. TRAN: Q: Thank you. I don't have any other
6 questions.

7 THE CHAIRPERSON: Thank you, Ms. Tran.

8 So you're almost done. I'll just see if
9 the panel has any questions for you.

10 COMMISSIONER FUNG: No, I do not. Thank you.

11 THE CHAIRPERSON: I know I've asked a number of questions
12 throughout and I thank the panel for your indulgence,
13 I appreciate your answers. I'll just ask one final
14 quick question if I could though, please, because I
15 think I heard answers to this at various times and I'm
16 not sure that I fully understand the answer.

17 So there is a meter on the DC side, on the
18 high voltage DC side of your charging stations that
19 measures electricity, electricity that's delivered to
20 the car, is that -- that was in the diagram in the
21 slide show, correct?

22 MR. PAPADOULIS: A: Yes, embedded within the charger
23 itself.

24 THE CHAIRPERSON: Right. But did I also hear that that
25 meter can't be used for billing purposes?

26 MR. PAPADOULIS: A: Correct.

1 THE CHAIRPERSON: Correct, okay.

2 MR. PAPADOULIS: A: It's not approved by Measurement
3 Canada.

4 THE CHAIRPERSON: Thank you. And if, as and when
5 Measurement Canada does change the rules, so to speak,
6 then you would need to get Just Energy to make
7 modifications to that meter do that it could be sued
8 for billing purposes, is that -- do I understand that
9 correctly?

10 MR. PAPADOULIS: A: We may have to. Depending on what
11 Measurement Canada comes up with, it may require that
12 we make some change. But, you know, I don't
13 anticipate that we're ripping the machine apart.

14 **Proceeding Time 3:32 p.m. T69**

15 THE CHAIRPERSON: Okay. So assuming that that is or
16 close to what has to happen then, did I also hear you
17 say that Just Energie was going to be making
18 modifications next spring for that? Is that what I
19 heard?

20 MR. SIMMONS: A: Sorry, this is Greg Simmons. Just for
21 the record the entity is AddEnergie.

22 THE CHAIRPERSON: Sorry, AddEnergie. My apologies.
23 AddEnergie, yes.

24 MR. SIMMONS: A: Yeah, A-D-D Capital E-N-E-R-G-I-E, I
25 guess. I noticed the transcript had the name
26 incorrect as well.

1 THE CHAIRPERSON: Yes.

2 MR. SIMMONS: A: They're a network management systems.
3 So assuming that meter is compliant with Measurement
4 Canada requirements, they will have the functionality
5 within their system by spring. And I guess even if
6 the meter isn't Measurement Canada compliant, they
7 will have that. So.

8 THE CHAIRPERSON: They would still have it.

9 MR. SIMMONS: A: Yes, the kind of the programming
10 behind the scenes, yeah.

11 THE CHAIRPERSON: Okay, so that's spring of 2022.

12 MR. SIMMONS: A: Correct. This coming spring.

13 THE CHAIRPERSON: So there wouldn't be a lag
14 presumably, and if all works properly after
15 Measurement Canada, or if Measurement Canada approves
16 it later next year, you will be all ready to go. You
17 know, if the assumption there is correct, that those
18 can be used.

19 MR. SIMMONS: A: Yeah, that's definitely the hope that
20 we be in advance and well tested prior to that.

21 THE CHAIRPERSON: Right. Okay, great, thank you.
22 Okay, so those are all my questions, all
23 the panel's questions. So I'd like to thank you all
24 very much for your helpful answers. We really
25 appreciate it.

26 THE PANEL MEMBERS: Thank you.

1 THE CHAIRPERSON: Oh, apologies. Mr. Flintoff?

2 MR. FLINTOFF: Yes. I gather I'm not totally familiar
3 with streamlined process so I thought there was a
4 return going on to ask questions that weren't asked
5 and answered, and I'll waive that and I'll have to
6 address it later.

7 THE CHAIRPERSON: Do you have a quick question for the
8 panel?

9 MR. FLINTOFF: I can just cover the topics. The time-
10 based rates comparison with streetlights is invalid
11 because there is no convenient point of metering,
12 there's no measurement of time and whether the load is
13 there or not you pay for the light.

14 THE CHAIRPERSON: Okay. But do you have a question?

15 MR. FLINTOFF: No.

16 THE CHAIRPERSON: Okay.

17 MR. FLINTOFF: The question I have, is the DC meter in
18 the charger, is it ANSI approved now?

19 MR. PAPADOULIS: A: I don't know.

20 MR. FLINTOFF: Okay. That's it.

21 THE CHAIRPERSON: Thank you. All right, thank you very
22 much, panel. Appreciate it.

23 **(PANEL ASIDE)**

24 **(DISCUSSION OFF THE RECORD)**

25 THE CHAIRPERSON: So our next panel is Suncor. Do we
26 need to take five minutes to -- let's take five

1 numerous SRP questions from the Commission and from
2 the BC Sustainable Energy Association and Vancouver
3 Electric Vehicle Association on Thursday. Mr. Ma, Mr.
4 Billard and their colleagues worked diligently over
5 the last few days to prepare responses to all of these
6 SRP questions, as we understood that they were to be
7 responded to at these sessions. And it's Suncor's
8 intention to do so to the best of its ability.

9 So what we propose to do, we obviously
10 won't get through it all today. But what Suncor
11 proposes to do is essentially walk through the
12 questions that they received and provided responses as
13 they go along. Of course, subject to any questions
14 the Commission may have and then the witness panel is
15 happy to answer follow up questions from any party.
16 And we thought this would be the most efficient
17 helpful way to proceed.

18 And just to note, in addition to the
19 Commissions' confidential SRP questions, Suncor may
20 have some responses to the public SRP questions that
21 are also confidential in nature, which Mr. Ma or Mr.
22 Billard will identify those responses as they go
23 along. And if the Commission wishes, those could be
24 provided at an in camera session.

25 THE CHAIRPERSON: Sure.

26 MS. OLENIUK: And then just finally, several of the SRP

1 questions asked for calculations and updated tables.
2 And so the Suncor witness panel will endeavour to
3 provide those numerical responses verbally. But if
4 the Commission would like a follow up filing that sets
5 out those responses in a document, Suncor is of course
6 happy to do that.

7 And I just note that it might be helpful to
8 the Commission and participants, I'm not sure if we
9 can do it technologically, but to pull up the SRP
10 questions that Suncor's responding to on the screen
11 while they're responding to it so folks can follow
12 along. And if that is possible, the first exhibit is
13 A-17 and then C3-8 are the two sets of questions
14 they'll be responding to.

15 THE CHAIRPERSON: Let's move along and we're not -- we
16 don't have much time left this afternoon. We'll try
17 to get that set up for tomorrow morning.

18 MS. OLENIUK: Certainly, that's fine. And just with
19 that, that's the end of my closing remarks, so if the
20 witnesses can be affirmed and then they'll take us
21 through it. Thank you.

22 **SUNCOR ENERGY SERVICES INC. PANEL**

23 **PERRY BILLARD, Affirmed:**

24 **ED MA, Affirmed:**

25 **PRESENTATION BY SUNCOR:**

26 MS. OLENIUK: And I think, Mr. Ma, you had just some

1 opening remarks before you get started?

2 MR. MA: Yeah, thank you. Ed Ma, for the record,
3 spelled M-A.

4 I guess I'd like to start by thanking BCUC
5 for the opportunity to present evidence. We
6 deliberated when the opportunity came up whether to
7 submit as an intervener in the midst of a whole bunch
8 of other priorities that we have going on within our
9 company. And we always try where we can to take a
10 long-game view about things important to us, and EV
11 charging is one of those things. And so despite all
12 that we had going on we felt it was important to
13 appear before the Commission today to serve this
14 panel.

15 **Proceeding Time 3:49 p.m. T72**

16 And I also wanted to thank BC Hydro for the
17 last two days of being in the hot seat and providing
18 some very helpful and useful evidence and
19 clarification.

20 And as I've reflected on the entirety of
21 what we've heard so far, I felt it was important to
22 just share a few opening remarks. And to begin with,
23 I want to say that Suncor is most encouraged by the
24 fact that there is a mutually aligned objective in all
25 of this. And that mutually aligned objective is our
26 shared interest in terms of the climate outcomes. Not

1 once did I hear that that is an issue. And that is I
2 think an important piece, because having that mutual
3 line objective really dovetail's well with investment
4 in EV charging infrastructure. Because it's
5 absolutely critical in our view to meet not only our
6 national goal, but our provincial goal, and our shared
7 climate objective for the planet.

8 It also recognized that with all of the
9 evidence that is provided to date, in all of the IR
10 responses, it is clear to me that investors are in
11 this space trying to strike that right balance between
12 being too far ahead of a market, and finding a rate
13 that is feasible for sustainable investment, and
14 continued investment.

15 And I think it's really important to
16 understand that climate action capital is very scarce.
17 And it's in high demand, whether -- it's in high
18 demand globally because of the impetus to do right and
19 start to make wise investments in cleaner
20 technologies.

21 These technologies include things like
22 truly non-emitting renewable energy like wind, solar,
23 and perhaps nuclear, as opposed to emitting but low-
24 carbon renewable hydroelectricity. And also, in the
25 pursuit of low carbon hydrogen economy, and I note
26 that B.C. is the first province in Canada to actually

1 come up with a strategy, so I commend the province for
2 that. We also have things like carbon capture
3 investments and Squamish-based carbon engineering is
4 leading in terms of direct air capture. These are all
5 areas where investors are interested in deploying
6 those climate action dollars.

7 And not withstanding our shared, mutual
8 interest in the environment between Suncor and I would
9 say BC Hydro, I think the crux of the issue is whether
10 there is a level playing field between BC Hydro
11 regulated utility, and those of private investors in
12 the non-regulated or exempt utility market. And it
13 has to do with our ability, I think -- and in that
14 regard, I guess the non-exempt utility has the ability
15 through statute to recoup the investment losses from
16 ratepayers where private investors can't. That's the
17 crux of the issue.

18 I'm not an economist, right? But this
19 legal construct is really in my view inhibiting price
20 discovery through what would otherwise would have
21 normally occurred in an unfettered market. And where
22 we are challenged in this process to provide answers,
23 particularly on pricing, is because natural market
24 dynamics is our frame of reference. We market many
25 commodities on a regular basis, we're experts at that.
26 However, trying to navigate between a quasi-regulated

1 and a non-regulated market as a market participant in
2 the non-regulated space, we are very much a student,
3 and we are here to learn, and we've learned a lot.
4 So, we thank the panelists again for their
5 contributions.

6 **Proceeding Time 3:54 p.m. T73**

7 Also want to state that we disagree with
8 the testimony with the testimony provided by BC Hydro
9 yesterday that if the rate goes up, utilization goes
10 down. At the moment we'll never know because there is
11 actually no mechanism that allows for natural price
12 discovery or fair competition. And a lot of questions
13 and information was shared around utilization.

14 The rate issue before the Commission is
15 tied to utilization, which is to me in a simplistic
16 manner, speaks to how long a particular investment, in
17 EV charging in this case, will take to recoup. And on
18 this point it's important to note that much of the
19 evidence on the record to date has been focused on
20 cost recovery, not a return on capital. None of the
21 scenarios, including BC Hydro's Scenario 3 under
22 Exhibit C6-4 Table 3, contemplated a return on
23 investment. Our view is that a return on capital
24 employed can be addressed through fair competition, if
25 that can exist.

26 And I commented that investor capital,

1 earlier, is always kind of mobile. And as a publicly
2 traded company we know this acutely well. You just
3 have to look at our ticker symbol to see how it
4 changes by the second. And within Suncor we have a
5 fiduciary obligation to our shareholders to be good
6 stewards of their recourses. And it's that which
7 drives us to look at different projects and different
8 opportunities, such as EV charging.

9 And when we do so we do internally, we
10 compete for capital. Different projects would compete
11 for capital naturally because there's a finite amount
12 of money to invest year over year. And that
13 competition is against a global portfolio of
14 technologies. So, we have to invest it wisely. And
15 I'd like to believe that our colleagues at BC Hydro is
16 doing the same, because we heard testimony today that
17 their shareholders are essentially the rate base and
18 British Columbians.

19 Suncor's interests in these proceedings is
20 really to find a way that allows for a modicum of fair
21 competition at the end of the day between regulated
22 and non-regulated private investors. And why it
23 matters to us is because we want to ensure that the
24 development of scarce climate action capital can be
25 deployed in the most efficient and effective manner
26 possible.

1 And as I think about the opportunities
2 before us, those signals couldn't be -- the signals
3 couldn't be clearer that there is a need for
4 investment. These signals include the *Clean Energy*
5 *Act* itself and the regulations that support it. The
6 *Climate Change Accountability Act* that basically has
7 B.C.'s reduction targets reach 80 percent by 2050
8 relative to 2007 levels. The CleanBC goals. We have
9 the B.C. Carbon Tax that's intended to drive consumer
10 behaviour changes to move away from higher emission
11 and intensive energy choices to lower carbon and
12 renewable energy electricity choices. We have the
13 *Zero Emission Vehicles Act*, which is, ultimately,
14 requires 100 percent EV sales by 2040. And I would
15 argue that the urgency is even greater now that our
16 federal government has announced that that goal is now
17 going to be 2030. The Federal Carbon Tax also exists
18 to do something similar to B.C. in the event of there
19 ever being a backstop jurisdiction. And that tax
20 rises to \$170 per tonne by 2030.

21 This is all really important because we --
22 it's intended to drive consumer behaviour change. And
23 we even have in B.C. a recent May 2021 publication
24 called the *British Columbia Public Light Duty Zero-*
25 *Emission Vehicle Infrastructure Study*, where on page
26 20, Table 3, it indicates that today we are -- in

1 terms of EV charging ports, we are at 436 ports. And
2 we need to get to 6,710 ports by 2040. We actually
3 now need to do that by 2030, which underscores the
4 magnitude of the challenge that's before us. And the
5 need for critical and private capital to invest in
6 this space because what we've heard so far is that
7 we're not sure that it's fair for ratepayers to foot
8 the bill.

9 **Proceeding Time 3:58 p.m. T74**

10 The outcome in 2040, or 2030 as it is, as
11 it may be, isn't binary in terms of it being either a
12 failure or success in our view. We like to see a
13 pathway, or we see a pathway to it potentially being
14 wildly successful by 2040. And we remain hopeful that
15 these investments will make economic sense in the
16 future for us to participate in that space.

17 So, at this time, I'm going to turn to my
18 colleague who will begin the response to the IRs.

19 THE CHAIRPERSON: Thank you. Just before you start,
20 it's a few minutes before 4 o'clock, so I'm wondering
21 if -- and 4 o'clock is the time that we have scheduled
22 to adjourn, and I'm respectful of people's time and
23 commitments that they may have made. So, I'm
24 wondering if we should wait until tomorrow morning to
25 begin the responses, if that works for you, then I
26 think we should do that?

1 MR. MA: We are at the Commission's disposal.

2 THE CHAIRPERSON: Thank you. Let's do that then. So,
3 tomorrow we will reconvene at 8:30 and it looks like
4 we may be able to wrap things up tomorrow. Hopefully
5 before 4 tomorrow, but it will take what it takes.

6 But I would, before we leave tomorrow, I
7 would like to hear some submissions on further process
8 in the proceedings. So if you could give some thought
9 to that overnight, and later in the day tomorrow we
10 will ask for your thoughts on where to go next.

11 So, on that note, I hope you all have a
12 great evening and safe travels. Thank you.

13 **(PROCEEDINGS ADJOURNED AT 4:00 P.M.)**

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