

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

GRAPHITE CHARGING COMPANY LLC,
Patent Owner.

IPR2024-00388
Patent 8,291,243 B2

Record of Oral Hearing
Held: May 28, 2025

Before KEN B. BARRETT, MIRIAM L. QUINN, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

APPEARANCES:

ON BEHALF OF THE PETITIONER:

ALEXANDER B. STEIN, ESQ.
PETER M. LODERUP, ESQ.
Morgan, Lewis & Bockius LLP
1301 Second Avenue
Suite 3000
Seattle, Washington 98101
(206) 274-6437 (Stein)
alexander.stein@morganlewis.com

ON BEHALF OF THE PATENT OWNER:

JASON M. SHAPIRO, ESQ.
NADIA S. LOIZIDES, ESQ.
Devlin Law Firm, LLC
1526 Gilpin Avenue
Wilmington, Delaware 19806
(302) 449-9010
jshapiro@devlinlawfirm.com

The above-entitled matter came on for hearing on Wednesday, May 28, 2025, commencing at 1:00 p.m. EDT, via video-conference.

P R O C E E D I N G S

- - - - -

(1:08 p.m.)

JUDGE BARRETT: Welcome, everybody. We are on the record in IPR2024-00388, Tesla, Incorporated, versus Graphite Charging Company, LLC. This hearing today is being conducted by videoconferencing. I am Judge Barrett, and with me today are Judges Quinn and Meyers.

I'd like to begin with the parties' appearances. Who do we have today for Petitioner?

MR. STEIN: Hello, Your Honors. This is Alex Stein on behalf of the Petitioner. With me is Peter Loderup and Paul Marguiles.

JUDGE BARRETT: Welcome, and who do we have today for Patent Owner?

MR. SHAPIRO: Hello, Your Honors. My name's Jason Shapiro. I'm lead counsel for Graphite Charging Company, the Patent Owner, and with me today is my colleague Nadiia Loizides.

JUDGE BARRETT: Welcome to you, too. Well, you all have been here before, you know how this works, but just as a reminder, we set out the procedure in our hearing order. In the order we set the time for 60 minutes for each side, however both parties have a LEAP practitioner, and that refers to the Legal Experience and Advancement Program. That means each side will have an additional 15 minutes. Therefore, Petitioner will have 75 minutes total, Patent Owner will also have 75 minutes total.

That is a lot of time, and do not feel compelled to use it all. I don't think it's necessary for this case, but you are the masters of your own case. Petitioner will go first and may reserve time for rebuttal. Patent Owner will

1 then have an opportunity to present its case and may reserve time for a sur-
2 rebuttal, then Petitioner will present its rebuttal, Patent Owner its sur-
3 rebuttal. I will be monitoring the clock and will give you warnings on time,
4 but I suggest you have someone in your team also watch the clock and give
5 you whatever time warnings you want.

6 We have your demonstrative exhibits pulled up on our computers.
7 Please, as you're going through your presentation, read off the slide that
8 you're on and we can quickly navigate to that point. Both parties have filed
9 objections to demonstrative exhibits. The demonstratives are not evidence
10 and they're merely aids for your oral arguments. We have reviewed and
11 considered your objections and we'll consider them when we're drafting the
12 final written decision, we're not going to exclude any slides or anything like
13 that today. And if any untimely new arguments are made today or
14 mischaracterizations or something like that, we won't consider that. When
15 we're drafting the final written decision, we will rely on the timely
16 arguments made in the briefs.

17 Please do not interrupt or object when the other side is presenting.
18 You may address any issues when it's your turn to speak. These hearings
19 are open to the public and there is in fact an open line that will allow the
20 parties to view today's hearing. I don't expect anything in the nature of
21 confidential information, but if you suspect something like that is coming up
22 just pause, let me know, and we'll decide how to handle it. Any questions or
23 concerns before we begin? Petitioner?

24 MR. STEIN: No, no questions or concerns, thank you.

25 JUDGE BARRETT: Patent Owner?

26 MR. MR. SHAPIRO: No questions or concerns, Your Honor, thanks.

1 JUDGE BARRETT: All right, wonderful. Then with that, Petitioner
2 you may begin whenever you are ready, and if you can let me know how
3 much time you would like to reserve?

4 MR. STEIN: Yeah, I'll try to reserve 20 minutes for rebuttal.

5 JUDGE BARRETT: Okay, reserving 20 minutes. You may begin
6 whenever you are ready.

7 MR. STEIN: Okay, thank you, Your Honors. And as I mentioned
8 earlier, I'm Alex Stein here on behalf of the Petitioner to discuss the
9 unpatentability issues for U.S. Patent Number 8,291,243, which I will refer
10 to as the '243 Patent. If you could go to slide number two in my
11 demonstratives, I'll just give a brief preview of where I'm headed today.

12 So, first, we'll very briefly look at an overview of the '243 Patent,
13 followed by looking at each of the grounds for unpatentability. Ground 1,
14 based on the Wang reference, Ground 2 based on the Wang and the AESO
15 Report, and then Ground 3 based on Cooley. And I'll focus on, or I'll try to
16 focus on just the disputes, but of course if Your Honors have questions I'm
17 happy to address those out of turn. And then my colleague Mr. Loderup will
18 talk about the motion to exclude and the motion to strike and our opposition
19 to those.

20 Next, if you could please turn to Slide 5, and here you'll see
21 independent Claim 1. Independent Claim 1 is written in fairly general,
22 broad terms, you'll see limitation 1A is an acquiring operating
23 environmental condition data step, 1B is you analyze that to look for an
24 indication of a high demand for electric power, and then 1C, you have a
25 computational device that automatically reduces a current amount of

1 consumption of electric power. So pretty simple claim, written in broad
2 terms, and we'll talk about why that's important when we get to the prior art.

3 If you'll turn to Slide 6, please. And when I'm talking about breadth,
4 I'm referring mainly to this operating environmental condition data term,
5 because it's important when we get to the prior art. So you see here on Slide
6 6, we've reproduced a portion of '243 Patent from column four, lines 50 to
7 57, and you'll see that there's lots of examples for what this environmental
8 data input and the power setting indicator can be, and they're listed here.
9 They include a spot price of electricity, a rate of change of price of
10 electricity, weather conditions, time of day, a facility energy use, census data
11 associated with a specified energy use, as well as other data relevant to
12 energy costs. So again, just framing things that we'll get to in a minute, this
13 data is broad and the indicator is also something that just can tell you that
14 there might be a high demand, but it doesn't always follow that there is high
15 demand. And we'll talk about why that's important. Now let's jump --

16 JUDGE QUINN: Counsel, can I ask you a question about this
17 disclosure here? The claims require, however, data separate from an
18 indication or an indicator. Are you contending that this paragraph has some
19 bearing on whether there is a difference between the two terms?

20 MR. STEIN: No Your Honor, those were still addressed separately in
21 our claim by claim analysis in the petition. So no, I'm not contending that
22 the two terms collapse together. We did address them separately.

23 JUDGE QUINN: Okay, and so as far as the indication is concerned,
24 all of these things that say here in this column four disclosure that the
25 indicators are also some type of information, is that right?

26 MR. STEIN: That's correct, yes. And I could jump -- yeah.

1 JUDGE QUINN: You can finish, I'm sorry.

2 MR. STEIN: Oh, I was just going to say I was going to jump ahead in
3 my slides to focus on that particular issue if you'd like me to, about the
4 indication.

5 JUDGE QUINN: Yes, you can do that, thank you

6 MR. STEIN: Okay, thank you. So if we jump ahead to Slide 14, this
7 is an issue that got quite a bit of treatment in the briefs and at deposition as
8 well. So the point we're trying to make is that it is an indication, it doesn't
9 mean that there has to be a high demand. And you'll see in the red box on
10 Slide 14, in the upper left corner, Patent Owner seems to be taking the
11 position that tariff rate data, which is one of the examples of the operating
12 environmental condition data that we relied on from Wang, it's not the only
13 one, and I'll talk about that as well, but they're taking the position that it can
14 just be used to determine a high electric -- high electric power demand
15 indication, but that's all the claims require. They just require that you have
16 an indication, and they don't require that it always indicates the same thing.

17 And you'll see here, Patent Owner's expert, Dr. Cameron, we have
18 some of his deposition testimony on Slide 14 here where he says -- so one of
19 those examples of spot price of electricity, he even says spot prices don't
20 directly correlate always to high demand, there's a lot of reasons that the
21 price could increase that have nothing to do with the demand for power. So
22 again, even these examples that we have from the patent that are used as
23 these indicators, they don't always mean that there is in reality high demand,
24 they're just something that can indicate that there might be. And that's an
25 important dispute from the briefs that, like I said, was talked about quite a
26 bit.

1 And if we turn to Slide 15, you can draw a similar conclusion when
2 you look at the dependent claims as well. So if you look at Claim 5, which
3 we have on Slide 15 here, you'll see that this claim limitation itself is written
4 in optional language. It says, the part that we have highlighted, indicates an
5 unusual weather condition that may result in heavy demand. So this is really
6 quite compelling when you're thinking about what this indication actually is,
7 because one of the dependent claims itself tells you that there's this optional
8 relationship. Yes, unusual weather condition can be a high demand
9 indicator, but it doesn't mean just because there's a storm, just because
10 there's unusual weather, you always have high demand. And that's an
11 important issue that's, like I said, been briefed quite a bit in this case.

12 And again, we know that because Patent Owner's expert told us that
13 as well. So here on Slide 15, you'll see the testimony from Dr. Cameron
14 was, weather can be a reason for power demand to increase, but it may not
15 be the only reason, right? Or it may not be, it may not track exactly. So
16 again, these things don't always correlate perfectly. They're just like the
17 claim language says, they're high demand indications. They indicate that
18 there might be high demand, they don't mean that there always is high
19 demand.

20 And if we turn to Slide 16, you can see the same sort of an analysis
21 with Claim 7 here. So you'll see in limitation 7B, it's talking about how you
22 determine this indication of high demand, and the example that it gives there
23 is if the operating environmental condition data feed information indicates a
24 relatively environmentally friendly energy producer is near its output
25 capacity. And again, to seek to understand this, we asked Patent Owner's
26 expert what this means, and he explained, you can see in the red box on

1 Slide 16. So if I had, you know, data with one among many being at
2 capacity, it doesn't really tell me anything about whether I'm under a high
3 demand condition or not. So again, when you take the evidence in its
4 totality, looking at what the indication is, looking at these dependent claims,
5 you can see that this doesn't have to have a perfect correspondence, that
6 every time you see this information you always have high demand. It's a
7 looser relationship, and the claim says that when it uses the term indication.

8 JUDGE QUINN: So question for you, I read this testimony and it was
9 very confusing. I don't think that there was any conclusiveness one way or
10 another, since two pages after this citation he sort of recanted what he had
11 said earlier. So I'm not sure that your testimony here is persuasive, but I'm
12 more interested in why did you seek the expert's opinion on what the claim
13 means? Do you believe that the claim has meaning that is customary to
14 persons of skill in the art, or is it just plain and ordinary meaning?

15 MR. STEIN: Yeah, our position is that it's plain and ordinary
16 meaning.

17 JUDGE QUINN: So then why would we need to rely on any kind of
18 expert testimony one way or another?

19 MR. STEIN: I don't think that you have to, but I do think, like I said,
20 that it's compelling to see what these terms mean to the experts that have
21 been involved in the case, because yes, it's a matter of law and Your Honors
22 can reach those conclusions without expert testimony, but I do think expert
23 testimony is revealing when it cuts against some of the positions that Patent
24 Owner has been presenting. So that's where I think it's useful.

25 JUDGE QUINN: Okay.

1 MR. STEIN: If we turn now to Slide 17 for a minute, I'll make one
2 more point on the high demand indication, and this is from Patent Owner's
3 sur-reply. So in their sur-reply, in the red box in the upper left corner of
4 Slide 17, you'll see that they're saying Claim 1 merely requires -- they're
5 referring to our argument, and then they're saying that our argument, and
6 this is the point, because the indication is a determination, not data that may
7 indicate same. But again, if we go to that portion of the patent that we
8 looked at earlier, the '243 Patent at column 4, lines 50 to 57, you'll see that
9 data is exactly one of the examples of what this indication is. And there's
10 many examples of the type of data that can form this indication. So Patent
11 Owner's argument from this sur-reply is inconsistent with the patent.

12 Now, if we jump back just for a minute to Slide 11, I want to focus
13 just briefly on the issues as to the Wang reference. So you'll see here, as I
14 had highlighted earlier, there are express teachings related to the tariff data,
15 we also relied on inherency, and we also relied on non-tariff examples. So
16 there were three different ways that you can reach the conclusion that we've
17 made a sufficient showing, even though Patent Owner really focused
18 myopically on the tariff data, but that was not the only argument.

19 If we go to Slide 12, one of the real disputes as to the Wang reference
20 is Patent Owner's position that in Wang, it's the human user not the
21 appliance that does the regulating. And that's just not consistent with the
22 reference. The reference says time and again that it's the appliance, and
23 some of the components and circuitry that are added to the appliance with
24 Wang's teachings, those are what are making these determinations. And
25 Wang says time and again, we have one example here on Slide 12, the lower
26 box in the lower left corner says, in the summer months application

1 processor 416 controls the air conditioner relay, and in the winter months
2 application processor 416 controls the electric heater. It's the appliances
3 that are making these decisions and that are changing the settings. It's not
4 the user. The user sets general parameters. If you turn to Slide 13, the user
5 makes general, like I said, general parameters to define what their
6 preferences will be when this tariff information is received by the system,
7 but it's the system itself that's making the power curtailments. It's not the
8 user.

9 And one other sort of interesting point where we can see that is on
10 Slide 13, we've reproduced the Wang reference, page 52, lines 10 to 13, and
11 page 16, lines 16 to 17. This also talks about the fact that there's an override
12 function. Now if the system were not functioning autonomously, there
13 really would be no reason for an override function. It'd be the equivalent of
14 the user sort of setting a temperature set point and then running over the
15 appliance and unplugging it. It doesn't make sense. The existence of this
16 override also confirms that it is the system and its application processor that
17 are making these curtailments, it's not the user.

18 Now if we jump to Slide 18, which unfortunately is missing the
19 number, but if you go to Slide 18 in the deck, you'll see that there's more
20 compelling information from Wang about its repeated teachings that its
21 system is functioning autonomously. And the two key quotes you can see in
22 the lower left corner of this slide from Wang, page 15, lines 13 to 27, it says,
23 each such appliance is configured to use such information in an autonomous
24 manner, and then it repeats and says it in a little bit different way, it says
25 each appliance is capable of independent load-shedding decisions. So the
26 user can set general parameters for how the system works, but it's these

1 smart appliances in Wang that are making the decisions and that are
2 curtailing power. You can see in Figure 7 there some of the components that
3 are included with Wang's smart appliance, and there's one in particular
4 colored in the blue box, that processor 416, that is the sort of brains of the
5 operation in making these curtailment decisions.

6 JUDGE QUINN: Excuse me, which limitation are you referring to
7 when you're making these arguments?

8 MR. STEIN: I'm referring to the limitation about the computational
9 device automatically reducing. So that's limitation 1C. Patent Owner has
10 taken --

11 JUDGE QUINN: So I have questions for you about -- are you
12 planning on covering each limitation here? Because I think we have
13 questions about how you have mapped the Wang two limitations, 1B and
14 1C, and I'm getting confused by your presentation. You're jumping all over
15 the place.

16 MR. STEIN: Okay, I'm happy to answer the questions then, Your
17 Honor, please let me know.

18 JUDGE QUINN: So one of the questions I have, in your petition, you
19 have mapped limitation 1B, which is the analyzing step of Claim 1, to the
20 HVAC thermostat plus the display, is that right?

21 MR. STEIN: That's correct, yeah.

22 JUDGE QUINN: Okay, and so I want to know what exactly is doing
23 the analyzing in the HVAC thermostat and in the display?

24 MR. STEIN: So there's different components depending on which
25 element. So I'm just going to open the petition up, and if we go to -- I'm
26 just going to find the part of the petition that I wanted to mention. Yeah, so

1 if we go to page -- sorry for the slowness there, but page 24 of the petition.
2 You'll see that the petition explains that there's an analysis done at the
3 appliance/load shed application processor 416, and that component is
4 included as the smart appliance. And we did also use the display, both
5 because it has a clearer teaching of the visual display of a high demand
6 indication, which is pertinent for Claim 8, but also because the display gets
7 additional information that isn't always explained in the reference as having
8 the information that's provided to that appliance/load shed processor.

9 JUDGE QUINN: Okay, so are you saying they're independent
10 embodiments you're relying on? So the HVAC thermostat is one
11 embodiment that performs the analyzing step as claimed, and then the
12 display is another embodiment in Wang that also performs the analyzing
13 step?

14 MR. STEIN: That's accurate, and we did explain that. That's why in
15 the petition we talked about a motivation to combine embodiments, because
16 we were combining embodiments in the manner you highlighted.

17 JUDGE QUINN: Well I am confused, because I thought in your reply
18 you said that both together were the computational device.

19 MR. STEIN: That's correct. The way we assembled the combination
20 was, you can have different components within the computational device
21 that do different things. So the computational device is the smart appliance
22 with the display. But in so doing, we did combine embodiments.

23 JUDGE QUINN: Okay. So in the HVAC thermostat embodiment,
24 what is the analysis that leads to the indication?

25 MR. STEIN: So if you look, for example, on page 31 of the petition,
26 the analysis would be, for example, you can see how there's an air

1 conditioner set point, an electric heat set point, and an energy tariff. So the
2 analysis is, you're looking at that energy tariff line, that plot in red, and
3 you're figuring out whether the user's preferences for adjusting the set points
4 need to be changed. So the analysis is looking at that tariff information and
5 then making changes at the HVAC like you see at the blue and the teal lines
6 on page 31 of our petition.

7 JUDGE QUINN: But it sounds to me like you're combining the step
8 of analyzing and also the reduction of power consumption. So I'm asking
9 specifically for the analysis step. If your operating environmental condition
10 data is your tariff information, then what is the analysis of the tariff
11 information that results in an indicator?

12 MR. STEIN: Specifically in the HVAC, not looking at the display
13 then?

14 JUDGE QUINN: Yes, you said there were independent ways in
15 which you can meet the claim. So yes, I want to know precisely in that
16 embodiment, what is the analyzing that results in the indicator?

17 MR. STEIN: Actually, I want to clarify what I said earlier then.
18 What I meant was, we've assembled this combined system of Wang using
19 Wang's display and also using its smart appliances. So they go together. So
20 you have the smart appliance and then you also have the display, but our
21 obviousness theory was based on the two together. So I'm not sure they're
22 separable, and if I said that before, I just want to correct that.

23 JUDGE BARRETT: Mr. Stein, let me come at it another way. We're
24 obviously concerned about limitation 1B, the analyzing limitation. So walk
25 us through your best case, your best embodiment, your best whatever. Walk
26 us through how you've mapped limitation 1B, and I think to Judge Quinn's

1 earlier point, as I read 1B, you've got what I'll call an input that is data, and
2 then let's just call it an output that's an indication. And in the middle, you
3 have some kind of determining. So walk us through piece by piece on how
4 you've -- Petitioner's best theory for why limitation 1B is satisfied.

5 MR. STEIN: Okay. So if we -- I'll just kind of go through the
6 petition then. So starting at page 24 at the bottom, the way we articulated it
7 is that that application processor 416 analyzes the data for relevant
8 information. e.g. power pricing, and then uses that information to execute
9 application code specific to the appliance in which the processor 416 is
10 embedded. So that's the analysis step. And then the determining step comes
11 after that --

12 JUDGE BARRETT: Before you move on, what is the data then?
13 You've been talking about tariffs, give me specific examples that you're
14 using. You said indicators can be tariffs or it can be other things, then what
15 is the data that is input to this analyzing step?

16 MR. STEIN: Let me find that. So, I guess the easiest slide that I
17 would look at for this is -- well, maybe we just go back to the petition,
18 because I think maybe the most straightforward example of the data comes
19 from the AESO data that we see at page 25 of the petition. So you get
20 information on, you can see underlined in the petition on page 25, you have
21 total net generation on this grid, you have internal demand, you have load
22 responsibility. So these numbers are analyzed in the combination to be able
23 to figure out when you're using up the -- you're reaching a period of peak
24 demand. So that was one example. I think another example is the tariff data.

25 JUDGE BARRETT: Hold up, hold up. I'm a little slow today.
26 You're going to confuse me if you start mixing theories here. So if you

1 want to say AESO data is the input data, if you will, stick with that. Or if
2 you want to use tariffs, stick with that. But when you start mixing them, I
3 get lost.

4 MR. STEIN: Okay, my apologies for that. Let's stick with the AESO
5 data for now. So like I was saying, on page 25 you have information on the
6 overall generation of the grid as a whole, and you also have information on
7 individual plants. And the theory we presented is, this information is being
8 given to this appliance processor 416, and that it -- because this difference,
9 because there are no associations between when you get to peak power,
10 because you're getting close to the net generation, your demand number is
11 getting close to that, that is the determining of an indication of a high
12 demand for electric power, because of the numbers that you have from the
13 AESO data.

14 JUDGE BARRETT: Okay, so taking this step by step, you said that
15 AESO data is fed to the processor 416, is that disclosed in Wang? I've not
16 been able to find that.

17 MR. STEIN: I believe so, but let me check the reference. So for
18 example on page 16 of Wang, you'll see that it talks about -- it's not directly
19 connecting to the AESO, but it's talking about the electrical grid data. This
20 is in Wang, Exhibit 1005, page 16 at the bottom, the electrical grid data may
21 be, for example, a grid status, an energy tariff, or customer relationship data.
22 And so I think the way we used that is when it's saying the electrical grid
23 data, that includes the AESO data, since that is data on an electrical grid.
24 Another part in the petition was page 17, which talks about -- page 17 of the
25 petition, now, apologies, but if you look at the paragraph there below the
26 figure, you'll see that we discuss how these UMC receivers, each receiver

1 includes a radio receiver 402 capable of receiving real time utility tariffs and
2 grid status information. And again, our interpretation of that is that that
3 includes the AESO data, since that is information that reflects a status of the
4 grid. I just want to make sure I've been responsive, Judge Barrett, did that
5 answer the question?

6 JUDGE BARRETT: In a way it did. I mean just to be transparent,
7 I'm not seeing an explicit disclosure of that information, the AESO data
8 going to the processor. It feels like more of an obviousness argument, but
9 the petition almost states it like it's an explicit disclosure, and that's where I
10 was having some trouble. But I understand your position. Okay, so then
11 sticking with the AESO data through the processor, then what -- tell me
12 again, what is the determining and then what is the indication?

13 MR. STEIN: I was just going to the petition so I can answer
14 carefully. Right, so I mean we did refer to an obviousness theory. So going
15 back to page 25 of the petition, you'll see this is the element determining an
16 indication of the high demand for electric power from the power grid
17 system, and we do talk about Wang discusses AESO data, introduced above,
18 which is taught or suggested as being analyzed to make determinations
19 regarding demand for electric power, and then we have the color highlights
20 below that to sort of show the data points that would be compared. So if you
21 continue at the bottom of page 25, we talk about how Table 1 juxtaposes net
22 energy generated green, with internal demand red, and load responsibility,
23 and then we further explain how you can analyze this data to find that the
24 grid is experiencing great demand. So I believe we did explain it

25 JUDGE BARRETT: Not to be too picky, but you just said how you
26 could analyze the data, and I know you were just speaking colloquially, but

1 tell me what in Wang, what apparatus, what device, that you've mapped to
2 doing that analysis.

3 MR. STEIN: It would be the application processor 416, and/or the
4 display, the display 200.

5 JUDGE BARRETT: Well now you're mixing embodiments again.
6 Display or the processor?

7 MR. STEIN: Well, I guess I should try to unpack it once more. But
8 our analysis in the petition was based on a combination of embodiments. So
9 you have -- and I thought we had a good picture of it that I was looking for.
10 Yeah, so it's on page 16. If you look at footnote four, we did try to explain
11 that this and the following arguments primarily rely on a system including
12 Wang's appliance, UMC receiver and display. This and other combinations
13 of Wang's -- so we put these pieces from Wang together in our combination
14 that used pieces from different areas of the Wang reference.

15 JUDGE BARRETT: So I'm glad you came to this page, I just
16 actually noticed this this morning. That turquoise thing, I think that's a
17 smart refrigerator, that's a manipulated figure if I'm not mistaken, and the
18 figure, I think it's Figure 5, does not have a display on it, is that correct?

19 MR. STEIN: That is correct, and that's why we flagged it as an
20 annotated demonstrative. And I believe in Dr. MacCarley's declaration he
21 explains that as well, but that's why it does have that parenthetical there.

22 JUDGE BARRETT: Okay, just for future reference, at least I, when I
23 hear the word annotated, I think they've added colors or something like that,
24 not modified a figure from the reference.

25 MR. STEIN: Okay. I do think it was explained in Dr. MacCarley's
26 declaration as well, but I'd have to double check that.

1 JUDGE BARRETT: I'm sure you understand, though, I'm looking
2 for contentions and arguments in the briefs, and that's why, maybe why I'm
3 having trouble following. So please continue.

4 MR. STEIN: Okay.

5 JUDGE QUINN: Well, before you continue, follow up on what my
6 colleague just asked you, I believe we were referring to page 26 of the
7 petition, in which you pointed out that, you said that the application
8 processor is the one that would be doing the analysis, whether for the HVAC
9 or for the display. Wasn't sure if you were saying that both of them, the
10 analysis would go through the application processor, I need you to clear that
11 up. And then the second thing will be that sentence that is on page 26 that
12 says Wang's application processor 416 processes such data and adjusts
13 appliance power consumption accordingly, I need you to explain that second
14 part of that phrase, when it refers to the data that you were talking about, the
15 AESO data. Did I lose you?

16 MR. STEIN: No, I was just trying to make sure I understand the
17 question.

18 JUDGE QUINN: Well, let me parse it in smaller chunks so we can
19 get to it. First you said that the application processor was the device that
20 was doing the analyzing in both the HVAC thermostat and the display
21 components, correct?

22 MR. STEIN: Correct.

23 JUDGE QUINN: Okay. So the sentence on page 26 that refers to the
24 application processor that says it processes such data and adjusts appliance
25 power consumption accordingly, I want you to explain how is it that the
26 application processor adjusts the power consumption of either the HVAC or

1 the display or both with respect to the AESO data that is described in the
2 paragraph preceding this sentence?

3 MR. STEIN: Okay, well I guess I'd refer back on page 25 of the
4 petition to the sentence that sort of begins this part of the petition where we
5 talk about Wang discusses AESO data, which is taught or suggested as being
6 analyzed, to make determinations regarding demand for electric power. So I
7 think the way we were trying to frame it was, like Judge Barrett was saying,
8 under the purview of obviousness and looking through a POSA could do
9 with this data and would have been motivated to do. So when you read it
10 sort of starting from the top on page 25 --

11 JUDGE QUINN: But that's not what your petition says. Your
12 petition says that Wang teaches or suggests the analysis being performed.
13 That's different from saying that the analysis would have been performed
14 with the knowledge of a person of skill in the art. In my reading of Wang,
15 the AESO data is only used for displaying something or having a light
16 blinking, or providing some sort of messaging. And I'm trying to tie that to
17 what you're saying, that somehow the application processor would use that
18 information to adjust power, and to adjust power automatically, not by a user
19 receiving the information and then somehow pressing a button and saying
20 okay, appliance shut off.

21 MR. STEIN: Yeah, I guess I don't have a better answer for you, other
22 than what I said earlier, that this was within the purview of obviousness, and
23 when we got to this part of the argument, the analysis proceeded to this
24 point, after what came before it, where we look at the AESO data, you look
25 at what you can do with it. And we do say it again -- so also on page 25 to
26 the top of 26, the small difference, 15 megawatts between total net

1 generation and internal demand for the AESO grid suggests a high demand
2 for electric power. So we do, you know, use that same term which is within
3 the purview of obviousness for what this data reasonably suggests to a
4 person of skill in the art, and then after we go through that analysis, we talk
5 about how Wang's application processor processes data.

6 JUDGE QUINN: Where is your argument in the petition of what you
7 just said, that it is in the purview of obviousness and one would have
8 modified or added analysis or anything of that sort?

9 MR. STEIN: I guess I don't have a better part to point to, other than
10 when we used the phrase 'teaches or suggests,' which we have in the part we
11 were just looking at on page 25, and then also in the concluding sentence on
12 page 28 to 29, when we say Wang teaches or suggests and then we quote the
13 claim element e.g., analysis conducted by the application processor 416
14 and/or the display 200.

15 JUDGE QUINN: Okay.

16 MR. STEIN: So I guess when we were using teaches or suggests --

17 JUDGE QUINN: I understand.

18 MR. STEIN: Okay.

19 JUDGE BARRETT: If I could jump in on that real quick, and then I
20 can hand it back to my colleague Judge Quinn? The thing about the AESO
21 data being taught or suggested as being analyzed, that doesn't list an actor in
22 that statement. I don't know if that's actually passive language, but my read
23 of Wang is that AESO data goes to the display and is being analyzed by the
24 user, the human, and at least one of my concerns here is then we
25 immediately jump to a processor, and it's almost more of an assumption than

1 an obviousness argument that that data actually gets to a processor. So
2 that's not really a question, it's more of a statement, but feel free to react.

3 MR. STEIN: Yeah, I mean I guess those are fair points, but I would
4 stand behind what we put in the petition and the way it was articulated in the
5 realm of obviousness, that this is what the difference looked like, and if the
6 difference is just can we do this on a processor, I do think that's an obvious
7 technique, and that was the intention with the language in the petition, and
8 that's -- yeah, that's my response.

9 I would also, if I can pivot as well, I know we were focusing on the
10 AESO data, but I do think there's a clearer connection I guess, or more
11 explicit connection with the tariff data that we see discussed in the Wang
12 reference, when we looked at that Figure 10 from Wang, and how the red
13 tariff data is being correlated with the heat set points and the air conditioner
14 set points, and the fact that Wang repeatedly tells us that this is an
15 autonomous operation and there's independent load shedding. So I think
16 again, just, that was my response on AESO, but I also wanted to pivot to
17 highlight the tariff example as well.

18 JUDGE BARRETT: On that tariff example, then, applying that to
19 limitation 1B, is the tariff in that example the input data or the determined
20 indication?

21 MR. STEIN: I believe it's the operating environmental condition
22 data, which is how we mapped it on page 22 of the petition. And we did
23 also, on this issue of the indication of high demand, that -- I believe we
24 explained it in the petition that knowing connection between tariffs and high
25 demand, and that was part of the argument that's in the petition as well. I
26 believe that's on page 27. So that full paragraph in the middle, starting with,

1 given that tariff's function to discourage energy use, during periods of high
2 demand a POSA would have understood the power pricing increases
3 indicative of a high demand for electric power. So that was the way we
4 articulated the argument.

5 JUDGE BARRETT: Okay, thank you for that.

6 JUDGE QUINN: I have a question about that, because the way I read
7 the claim, you distinctly need two different things, you need the data and
8 you need to determine an indication from that data. And then that's
9 important because the next step, the computational device requires some
10 actions if there is that indication present. So if we can't get past the
11 indication, we can't get to the computational. So I want to find out from you
12 whether the claims can be broadly read to interpret the data and indication
13 sort of being like the same information. If you're saying that tariff
14 information is both the data and the indication, whether that is correct under
15 the claim language.

16 MR. STEIN: I guess we understood it more as -- yeah. I'm just
17 scrolling the petition to make sure I give an informed answer. And I guess
18 another point I would make here, because I was trying to make the point
19 earlier, but the way we put this combination together where you have the
20 display and you have this smart appliance with the appliance/load shed
21 processor, because that's the computational device, it's our position, and we
22 articulated this in the reply brief, that different components can do different
23 things. And the reason I'm pointing that out is because the appliance load
24 shed processor can do some of this analysis, but then the indication can also
25 be elsewhere. So for example, on page 28 of the petition we have an
26 annotated version of the image from Wang showing some of the indicators

1 that you get, visual indicators, and I don't think anything precludes there
2 being a visual indication of that high demand, which is what you get on this
3 display 200 that we have on page 28. And Wang has some explanations as
4 to how that shows you that the grid has experienced overloaded conditions,
5 which we bolded on page 28 of the petition.

6 JUDGE QUINN: So you're saying that the fact that the display will
7 display something is an indicator?

8 MR. STEIN: Correct.

9 JUDGE QUINN: But then how does that indicator then operate for
10 the computational device to automatically reduce the power consumption, if
11 that indicator is present? Where is the dependency of the HVAC thermostat
12 reducing or increasing the temperature set points based on if there is an
13 indicator?

14 MR. STEIN: Yeah, well I guess our view of the claim language is
15 there's a loose connection between those two things. So that is in limitation
16 1C, but it doesn't have like a clear temporal connection, it's just this
17 conditional if in that limitation 1C. 'If the analyzing determines the high
18 electric power demand indications.' So if you make that determination, you
19 illuminate those indicators on the display, and at the same time you have the
20 appliance processor making load-shedding decisions, I would submit that the
21 claim language is satisfied, because it doesn't require anything more than
22 that, it just requires those two things, which again, the combined Wang
23 system that we put together has all of those. They're just at different
24 components, but they're all part of the computational device.

25 JUDGE QUINN: I'm sorry, so the word if, what does it mean then?

1 MR. STEIN: At the time when you reduce the current amount of
2 consumption, you've also determined the high electric power demand
3 indication, which would be true in Wang.

4 JUDGE QUINN: Okay. So when the light comes on, on the display,
5 and nothing happens, the user doesn't press a button, there is zero interaction
6 with the thing --

7 MR. STEIN: Yeah.

8 JUDGE QUINN: You still meet the claim?

9 MR. STEIN: If you also reduce power consumption, which likely
10 we're looking at. I guess the cleanest example that we were looking at is
11 that Figure 10 from Wang. So at the time when you have this energy tariff
12 coming in and then you're changing your set points, if you also have the
13 display illuminating, because that's all part of the computational device that
14 we put together in Wang, I think that's sufficient.

15 JUDGE BARRETT: Mr. Stein, you have about 10 more minutes of
16 your original time.

17 MR. STEIN: Okay, well let me just ask the panel if there's more
18 questions for me, otherwise I want to make sure Mr. Loderup has time to
19 present his argument on the motions.

20 JUDGE QUINN: I want to ask you about limitation 1C.

21 MR. STEIN: Okay.

22 JUDGE QUINN: You there provided additional examples from
23 Wang in addition to the thermostat, like the smart clothes dryer and the
24 smart refrigerator. What is your argument for including those embodiments
25 on limitation 1C, but not for limitation 1B?

1 MR. STEIN: I think because all of these would have that appliance
2 load shed processor 416. So the analysis for 1B was focused on the
3 componentry that makes up these smart appliances, and they're present
4 within these other example embodiments as well. So by presenting the
5 arguments about the appliance load shed processor, it applies to these other
6 smart appliances as well.

7 JUDGE QUINN: And what is the indicator in each one of those?

8 MR. STEIN: It would be, I guess, the same answer that I was giving
9 earlier, where you have -- I think the primary indicator that we relied on was
10 the tariff data, and it's known relationship with peak demand. And because
11 you have that, and because you make a curtailment based on that, there's a
12 necessary determination that you have high demand indication, which is
13 what I was saying earlier. But in addition to that, there's also the display
14 200 and its visual indication.

15 JUDGE QUINN: So in all of these three embodiments, the HVAC.
16 Smart clothes dryer, and smart refrigerator, you have both in your contention
17 that the display will be an indicator and that the tariff data would also be an
18 indicator?

19 MR. STEIN: It's the tariff's data known association with high
20 demand would be the indicator, but not necessarily the tariff data standing
21 alone. So the way that the appliance load shed processor looks at that
22 information to then do something with it by changing the set points, that is
23 the indication. So it's something based on that, it's not necessarily only the
24 tariff data. It isn't only the tariff data.

25 JUDGE QUINN: But I think we established earlier, when you started,
26 that indication, the indicator, based on the specification, is information, is

1 data. So that's what I'm looking for. Tariff data seems to be doing both the
2 data and the indication, it's just you're ascribing meaning to that data to go
3 beyond what it says.

4 MR. STEIN: That's accurate, yeah, under the realm of the
5 obviousness framework, yes.

6 JUDGE QUINN: Okay, I understand your position. Thank you.

7 MR. STEIN: If there's no other questions from the panel, I'll ask Mr.
8 Loderup to present his oppositions on the motions.

9 MR. LODERUP: All right, good afternoon Your Honors, I'm
10 currently on Slide 58 of Petitioner's demonstratives. As Mr. Stein
11 mentioned, my name is Peter Loderup and I'll be discussing Patent Owner's
12 motion to exclude, its motion to strike, and why the Board should deny these
13 two motions in full. I realize we're short on time so I'm going to move
14 quickly here, but if there are any questions regarding these motions and our
15 oppositions to them, I'm happy to field those.

16 First, the motion to exclude. On Slide 59, at the top you'll see a
17 summary of Patent Owner's motion. Patent Owner's moving to exclude
18 nine exhibits as well as portions of four other documents that discuss or
19 otherwise pertain to these exhibits. We go into detail explaining why each
20 of the contested documents is admissible in our opposition. For purposes of
21 our conversation today, I'd just like to briefly cover three things in the
22 motion to exclude. First, the legal standard at play here, second, an issue
23 prevalent throughout Patent Owner's motion to exclude, and third, why
24 Exhibit 1006 in particular is admissible.

25 So first, the legal standard. I'm on Slide 60 now. At the top left of
26 this slide, you'll see a quotation from 37 CFR 42.20(c), federal regulations

1 establish that when a party moves for relief, that party bears the burden of
2 establishing that it is entitled to the requested relief. Patent Owner here has
3 failed to meet its burden in showing that it is entitled to exclusion of the
4 evidence it contests. Board precedent in Veeam, IPR2013-00150 indicates
5 that a motion to exclude must not only state why the evidence is
6 inadmissible, but it must also explain the objection. And that brings me to
7 the issue with many of Patent Owner's arguments. Patent Owner repeatedly
8 fails to explain its objections throughout its motion to exclude.

9 Let's take a look at two particularly egregious examples on Slide 61.
10 At the top of this slide, in this first red box you'll see the entirety of Patent
11 Owner's argument regarding why it believes Exhibit 1006 to be hearsay. In
12 the first sentence it states that the exhibit is hearsay and inadmissible. In the
13 second sentence, it simply provides the definition of hearsay, and again
14 states that it believes Exhibit 1006 -- that the definition applies to that
15 exhibit, and finally, it argues again in one sentence that no exceptions to the
16 hearsay rule apply here.

17 Your Honors, I'd just like to pause and note here that Petitioner
18 provides no explanation regarding what it believes the truth of the matter
19 asserted in Exhibit 1006 to be. Additionally, Petitioner does not explain
20 why it believes the cited portions of -- sorry. Patent Owner does not explain
21 why it believes the cited portion of the declaration to be relying on Exhibit
22 1006 for the truth of the matter asserted therein.

23 Similarly, Patent Owner's argument regarding the relevance of
24 Exhibit 1006 is threadbare. The second red box on this slide, Your Honors,
25 is the entirety of Patent Owner's argument regarding why it believes Exhibit
26 1006 to be irrelevant. It provides no explanation, nothing more than an

1 assertion that the exhibit is irrelevant and inadmissible. For other examples,
2 I'd point Your Honors' attention to Patent Owner's relevance arguments for
3 Exhibits 1012 to 1014, and hearsay arguments for Exhibits 1013 to 1015,
4 1017, and 1027. These sorts of arguments, Your Honors, are prejudicial to
5 Petitioner. We have done our best to understand Patent Owner's position
6 with respect to these various exhibits and papers, however it is difficult
7 when this is all that Patent Owner brings to the table. And for these reasons,
8 I would ask Your Honors to exclude -- to deny Patent Owner's motion to
9 exclude.

10 Lastly, I would like to discuss Exhibit 1006 in a little more detail. To
11 Patent Owner's credit, it does make a bit more of an argument regarding
12 why it believes Exhibit 1006 to be inauthentic. For a bit of background
13 context, I'd like to turn Your Honors' attention to the Wang reference,
14 which Mr. Stein has discussed in detail. On Page 35 of Wang -- and this is
15 internal page 35, not referring to the labeling at the bottom. But on page 35
16 of Wang starting at line 5, the reference indicates that the data provided in
17 section 5.9 was obtained from the AESO in Alberta, Canada on its
18 homepage, and then provides a URL to AESO's website, that's the Alberta
19 Electric System Operator. Then on the next two pages, Wang provides data
20 from AESO and indicates that this data is relevant to its invention.

21 Our expert, Dr. MacCarley, in paragraphs 32 and 33 of his
22 declaration, explains that he followed this URL, that he plugged it into the
23 Internet Archive's Wayback Machine to determine what AESO data would
24 have been available to a person of skill in the art prior to the '243 Patent, and
25 retrieved the data that is reproduced in Exhibits 1006 and 1018. Just to
26 explain the relationship between these two exhibits, Exhibit 1018 is the

1 entirety of the data that Dr. MacCarley pulled from the Wayback Machine,
2 and Exhibit 1006 is an excerpt of that data. You'll notice that Exhibit 1006
3 mirrors the data reproduced on page 13 of Exhibit 1018.

4 JUDGE BARRETT: You're cutting into your rebuttal time now, you
5 may continue if you like.

6 MR. LODERUP: Sure, I'll take two or three more minutes, if that's
7 all right.,

8 JUDGE BARRETT: That's fine.

9 MR. LODERUP: Turning back to Slide 62 of Petitioner's
10 demonstratives, you'll see a quotation from Exhibit 1018. This is from an
11 employee of the internet archive, declaring under penalty of perjury, that the
12 exhibit and the data reproduced therein is authentic. I think that's all I
13 needed to say for the motion to exclude. If Your Honors have additional
14 questions, I'll defer to the arguments that we make in our opposition.

15 Lastly, I'd like to address the motion to strike. On Slide 63, you'll see
16 that Patent Owner is moving to strike Exhibits 1014, 1025, and 1027, as well
17 as portions of Petitioner's reply. I think the only point that needs to be made
18 here is that Exhibits 1014 and 1027 are used in the Petitioner's reply and
19 referred to in Exhibit 1025, which is the deposition transcript of Patent
20 Owner's expert. Exhibit 1014 is an article that discusses the notoriety of
21 RSS and was used in response to Patent Owner's expert's position that RSS
22 would not have been well known, or at least may not have been well known
23 by a person of skill in the art, and Exhibit 1027 is an operating system user
24 manual with an example of a power reduction that directly rebuts Patent
25 Owner's position regarding construction of "current."

1 These exhibits, in our using these exhibits to respond to Patent
2 Owner's positions and arguments, we are in keeping with federal regulations
3 and Federal Circuit precedents, such as, for instance, on Slide 64 you'll see
4 37 CFR 42.23(b), indicating that a petitioner is entitled to respond to
5 arguments raised in the Patent Owner response, and then Federal Circuit
6 precedent from *Axonics* indicating -- upholding this regulation.

7 The motion is also duplicative and untimely, as we have explained in
8 our opposition. And for these reasons, Your Honors, I would ask that the
9 motion to strike and the motion to exclude be denied in full. Thank you.

10 JUDGE QUINN: I have just one question for you, as far as the
11 Exhibit 1006. If the date of that exhibit, as of the Wayback Machine is
12 1997, is that when it was archived?

13 MR. LODERUP: No, I don't think that's right. So at the top of
14 Exhibit 1006 you'll see the URL that it was pulled from,
15 web.archive.org/web/, and then here's the date, 2005, 02 for February, and
16 then 17. So, this data was archived on February 17th, 2005, and this is also
17 reflected at the top right of Exhibit 1006, indicating that it was last updated
18 on February 17th, 2005.

19 JUDGE QUINN: And so as of the time that you relied on it, it hadn't
20 been 20 years for the hearsay exception, is that right?

21 MR. LODERUP: Yes, Your Honor, that's correct.

22 JUDGE QUINN: Okay, thank you.

23 MR. LODERUP: However, the data, as we do indicate in our
24 opposition, is admissible as an exception to the hearsay rule as a public
25 records exception, I believe, which we discuss in our opposition. If there are

1 no further questions, then I'll thank the Board for its time and its
2 consideration and close here.

3 JUDGE BARRETT: All right, thank you. You have about 16
4 minutes left for rebuttal, by my count. Patent Owner, whenever you are
5 ready, and if you could let me know how much time you would like to
6 reserve for rebuttal?

7 MR. SHAPIRO: Thank you, Your Honor. I'd like to reserve 15
8 minutes of our time for sur-rebuttal, please.

9 JUDGE BARRETT: All right, 15 minutes.

10 MR. SHAPIRO: 15 minutes.

11 JUDGE BARRETT: All right.

12 MR. SHAPIRO: And let's go to Slide 2. These are the topics that we
13 had planned to discuss today. I'm going to provide just some very brief
14 comments about the '243 Patent, and then I'm going to skip to claim
15 construction and address Ground 3, which is the anticipation argument. And
16 then my colleague Mrs. Loizides is going to address Grounds 1 and 2, and if
17 there's time she'll discuss our claim that Dr. MacCarley is biased, as well as
18 the motions to exclude and to strike.

19 So moving to Slide 4, you've already heard about how the invention
20 requires operating environmental condition data that analyzes the data to
21 determine a high electric power demand indication, and then it automatically
22 reduces a current amount of electric power consumption if the analyzing
23 determines a high electric power demand indication. But it's also important
24 to understand the problems in the prior art that the '243 Patent was meant to
25 address. For example, the '243 Patent noted the inability of prior art power
26 management technologies to react to environmental conditions outside the

1 localized level that impact the present cost of power use, and that's in
2 column 1, lines 41 to 49, column 4, lines 16 to 19.

3 And the '243 Patent addressed these problems in several ways. First,
4 by configuring the power management system to acquire environmental
5 operating condition data from external sources such as data feeds, and
6 second, by analyzing the data to determine a high demand indicator that can
7 be included in an aggregate feed to cause a device to immediately reduce
8 power consumption. And this notion of immediate reduction in power
9 consumption is discussed explicitly in the patent, for example at column 6
10 lines 14 to 17. Let's go to Slide 5. Slide 5 shows, on the right, shows an
11 example embodiment of the invention that solves the prior art problems in
12 the manner that I just discussed.

13 Specifically in Figure 2, we see that there's a programmable device or
14 module 200, at the top of the figure, and a computational device 230 at the
15 bottom of the figure. And the figure also shows data feeds that are labeled
16 280 that are accessible to the programmable device 200 via communication
17 means 282. And there's other embodiments in which the acquisition of the
18 data and the analysis could be performed by the computational device or by
19 a service provider, but according to the '243 Patent, the programmable
20 device 200 at the top of this figure includes a data feed acquirer, which we
21 can see in the Figure 202, that acquires data from data feeds 280, and a data
22 feed analyzer 204 that analyzes the data to determine a high demand
23 indication, and a feed aggregator that aggregates a feed that includes high
24 demand indicators. And there's also a feed publisher 208 that publishes the
25 aggregate feed with the high demand indicator to the computational device,
26 which then reduces its current power consumption in response to the high

1 demand indicator. So, what we have here is a system that can immediately
2 reduce power consumption in response to changes in external environmental
3 operating condition data and overcomes those stated problems, which we
4 just went through. And I just -- this is the context in which the claims have
5 to be construed.

6 So, let's move to Slide 7. Slide 7 addresses the types of power
7 reduction actions that were envisioned by the inventors. And the power
8 reduction actions fall into one of two categories, those that occur
9 immediately and thus reduce a current amount of power consumption, and
10 those that do not. And again, I mentioned before how the patent talks about
11 immediate power reduction actions, for example if you look at the patent at
12 column 6, lines 14 to 17, it says in response, a high demand indicator may
13 cause the computational device to trigger immediate power savings
14 operations, as well as postponing or otherwise scheduled power consuming
15 activities as a function of preferential spot prices. So, it talks about
16 immediate power savings operations as well as postponing or otherwise
17 scheduling power consuming activities, so there's two different categories.
18 And I'm going to talk about that more in a moment.

19 So, let's skip to slide 13 and start talking a little bit about claim
20 construction. As we all know, the parties disagree on the meaning of at least
21 two claim terms, aggregate feed in Claim 8, and "current amount of
22 consumption" in all the independent claims, which are Claims 1, 11, 15, and
23 18. As you know, Petitioner did not offer a construction for either of these
24 terms in the petition, did not submit any rebuttal expert testimony on how a
25 person of ordinary skill in the art would understand the terms, and Petitioner

1 did not argue invalidity based on Patent Owner's constructions, which were
2 offered in its Patent Owner response.

3 At a very high level, in the case of the term "aggregate feed,"
4 Petitioner's asking Your Honors to construe the term in a vacuum, divorced
5 from other language in the claim, and divorced from the examples in the
6 specification that support Patent Owner's construction. And similarly, in the
7 case of the term "current amount of consumption" in the independent claims,
8 Petitioner's essentially asking Your Honors to just ignore the term. And
9 neither of Petitioner's arguments are tenable. So let's go to slide thirty --

10 JUDGE QUINN: Counsel, as far as the claim construction issue that
11 you're raising here with the word current, the impact of that construction one
12 way or another would be for Ground 3, the Cooley ground, is that right?

13 MR. SHAPIRO: It is primarily with respect to Ground 3, because,
14 you know, for the reasons that Your Honor is aware, but it's also true that
15 Wang doesn't disclose automatically reducing a current amount of power
16 consumption based on an analysis, right? And so it is relevant in Wang, but
17 in Wang the issues are tied to other claim terms, whereas in Cooley it's
18 really a very simple deficiency to explain.

19 So, what I thought I would do is use Petitioner's Slide 34 to start this
20 discussion. Okay, so if we turn for a moment to Petitioner's Slide 34, it
21 shows how the term aggregate feed is used in Claim 8. As you can see, in
22 Claim 8, what the claim is doing is further defining the analyzing step of
23 Claim 1, and it further defines the analyzing step to comprise applying a
24 weighted function comprising a linear combination of values obtained from
25 a plurality of different feeds, each of the different feeds having a weight, and

1 if the linear combination is above a certain threshold, including the high
2 demand indicator in the aggregate feed.

3 And I'd like to make a couple points about this. First, by reciting a
4 plurality of different feeds followed by the aggregate feed, it's clear from the
5 claim language and the plain and ordinary meaning of the word aggregate,
6 that the term aggregate feed in the claim, in Claim 8, is a feed combining
7 data from the plurality of different feeds as proposed by Patent Owner.
8 There's no other antecedent basis for the term feed in aggregate feed, other
9 than the plurality of different feeds. And the specification supports Patent
10 Owner's construction of aggregate feed being a feed combining data from a
11 plurality of different feeds. For example, at column 6, lines 46 to 49, the
12 patent states that the feed aggregator of the invention "aggregates data from
13 various providers 280 to create a single feed containing acquired data from
14 all the sources 280." And we also discuss this in the sur-reply at page 2.

15 In the same paragraph, the patent goes on to explain how "such feed
16 aggregation enables the computational device to access information from a
17 single source," and that's at column 6, lines 55 to 59. And again, the patent
18 at column 3, lines 2 to 7, states that "the analyzed data," so, "the analyzed
19 data is aggregated into a data feed." So again, all of these statements, and
20 there are others, support Patent Owner's construction of an aggregate feed as
21 being a feed that combines data from a plurality of different feeds.

22 So turning back to Patent Owner's Slide 14, in our reply, pages 2 to 3,
23 we argued that Patent Owner's construction is inconsistent with the claim
24 language because the claim doesn't explicitly -- I'm sorry, in its reply,
25 Petitioner argued that Patent Owner's construction is inconsistent with the
26 claim language, because the claim doesn't explicitly say that the aggregate

1 feed includes the different feeds. However, by using the term aggregate, the
2 claim drafter clearly signaled that the term aggregate feed is a combination
3 of things, that is a plurality of other elements in the claim. And the only
4 plurality of elements in the claim that are explicitly recited in Claim 8 are
5 the values obtained from the plurality of different feeds, and the different
6 feeds themselves. Therefore, Patent Owner's construction is entirely
7 consistent with the claim language.

8 Petitioner also argued that the Patent Owner's construction is
9 inconsistent with the claim language because it omits the term indicator, but
10 this doesn't make any sense, because as I just mentioned an aggregate is a
11 combination of multiple things, but only a single indicator is recited in
12 Claim 8. And therefore, the aggregate feed must include more than just the
13 indicator. Additionally, Claim 8 is a dependent claim, as I mentioned
14 before, and it's further defining the step of determining a high electric power
15 demand indication, and it defines this step as, among other things,
16 comprising "including the high demand indicator in the aggregate feed." So,
17 this limitation in Claim 8 would be unnecessary if, as Petitioner proposes,
18 the term aggregate feed was construed to already include the high demand
19 indicator.

20 And I also want to mention that Petitioner's position's also erroneous
21 because there are scenarios contemplated in the patent in which there is no
22 indicator included in the aggregate feed. You know, for example, the patent
23 at column 3, lines 2 to 7, says that the aggregate feed includes the analyzed
24 data, and an optional indicator -- well, it doesn't use the word optional, it
25 says an indicator if the analysis determines high demand. So, it includes the
26 analyzed data, and if the analysis determines a high demand, then it also

1 includes the indicator. And then the next paragraph in the patent explicitly
2 states that the high demand indicator may or may not be present from the
3 aggregate feed, and that's column 3, lines 11 to 14. So, Petitioner's
4 argument that Patent Owner's construction is not supported because it
5 doesn't include the indicator just doesn't make any sense.

6 And as I mentioned, our argument for the meaning of aggregate feed
7 is based on the claim language, it's consistent with the spec, and I mentioned
8 before, some of the portions of the spec that do support it, for example as I
9 mentioned Claim 6, lines 46 to 49 that talks about how a feed aggregator
10 large component 206 within the memory 203 aggregates data from various
11 providers to create a single feed containing acquired data from all the
12 sources 280, and that's discussed in the sur-reply at 2. And this language in
13 the spec directly mirrors the claim language.

14 Petitioner then argues that Patent Owner's construction excludes
15 preferred embodiments, specifically a so-called data only embodiment, but
16 this is a red herring for several reasons. First, Petitioner hasn't provided any
17 support that the so-called data only embodiment is a preferred embodiment,
18 in fact the term preferred embodiment doesn't appear anywhere in the '243
19 Patent. Thus, even if there were a data only embodiment, it isn't a preferred
20 embodiment, and therefore it doesn't have to be covered by the claims as
21 we've stated in our sur-reply citing to the Pacing Tech's case, which is 778
22 F.3d 1021 point cite 1026.

23 The second reason that Petitioner's argument about a data only
24 embodiment is a red herring is that Petitioner's support for a data only
25 embodiment relies on cherry-picked snippets from the spec indicating the
26 analyzing entity acquires "feeds or data." And if we look, let's turn to

1 Petitioner's Slide 37. Sorry to make you go back and forth between the slide
2 decks, so I'll give you a moment to get there. But looking at Petitioner's
3 Slide 37, we see that Petitioner failed to mention two things. One is that
4 feeds contain data, and two is that the word data in the cherry-picked
5 snippets is always followed by words such as "from any individual service
6 providers."

7 Thus, when we consider these portions of the spec in their entirety,
8 what the specification is talking about is acquiring data from sources, you
9 know, service providers, data feeds, et cetera. And as Patent Owner
10 explained in its sur-reply, the specification uses the terms feed, data
11 providers, and sources interchangeably. And, you know, there are several
12 examples in column 5, like at line 2, and 32 to 35, 35 to 36, 57. There's no
13 data only embodiment somehow divorced from these sources. In each case,
14 data is acquired from some external feed, a data provider, or a source, just as
15 shown in the figures. And more importantly, even if there was a data only
16 embodiment divorced from an external source, which there isn't, there's no
17 evidence it's a preferred embodiment, so Claim 8 doesn't need to cover it, as
18 I mentioned before. And --

19 JUDGE QUINN: Can I ask you about that?

20 MR. SHAPIRO: Yes.

21 JUDGE QUINN: I was puzzled by one embodiment in the '243
22 Patent at column 4, line 57 through 62. And it's in that paragraph where the
23 specification describes examples of feeds and indicators, that we discussed
24 with Petitioner earlier today, but it says in that second part of it, it says in
25 another aspect, the present invention may simultaneously and efficiently
26 cascade power consumption reduction indicators or other data to a plurality

1 of computers, server farms, or other computer systems on a massive or even
2 global scale. And as I was reading that, it seemed to me that it was making a
3 case for broadcasting indicators without any kind of feed. Is that a
4 reasonable interpretation, or how else would you read that?

5 MR. SHAPIRO: That's an interesting question, Your Honor.
6 Obviously, this is a new issue that wasn't raised by any of the parties during
7 the proceeding, so I haven't had a chance to look at this carefully and
8 provide a response, you know, and give you a good response. But it does
9 seem that the -- this sentence that you're quoting does seem to indicate that
10 these power consumption reduction indicators can be sent in a cascading
11 manner to a plurality of computers or systems. And so, it's possible that this
12 could, you know, could be some sort of broadcasting, but I would need to
13 give it some more analysis and thought.

14 JUDGE QUINN: Yeah, and I appreciate that, and I homed in on the
15 part that says also "simultaneously," which it may mean also that while it is
16 possible to broadcast indicators to be more efficient, you still need to do the
17 traditional description of the feed aggregation or feed push pull, acquiring
18 and then analyzing. So either way, it seems like it's an additional
19 embodiment, but I wasn't sure if you were reading it in a very specific way.

20 MR. SHAPIRO: Right, so I think, we didn't rely on this in our
21 briefing, as I mentioned before, but this is something that I suppose the feed
22 publisher could be configured to do, under certain circumstances. So it's
23 actually, it's a good catch, it's an interesting sentence and the ramifications
24 are kind of interesting.

25 If Your Honors don't have any questions about Patent Owner's
26 construction of aggregate feed, I'll move on quickly. I think I only have a

1 few minutes left, because I want to leave some time for Mrs. Loizides to go
2 through Grounds 1 and 2 and potentially discuss those other topics, but in
3 terms of current --

4 JUDGE BARRETT: Mr. Shapiro?

5 MR. SHAPIRO: Yes.

6 JUDGE BARRETT: If I might interrupt, we understand your position
7 on current, it's temporal. I want to focus a few minutes on what it means to
8 be reducing a current amount of consumption. If I could direct your
9 attention to column 8, I think you were probably going to go there anyway,
10 the last paragraph in column 8 starts about line 47. I'm going to state what
11 my thoughts are, and then I'd like to hear your reactions. So that paragraph,
12 it starts with telling us that it's going to be examples of power reduction
13 actions, and then it's got a long laundry list, which I understand you contend
14 all of those except one is being done currently. And the one starts at line 61,
15 scheduling non-essential operations at a different time, e.g., non-essential
16 software or hardware upgrades.

17 So, in what I just read I see two actions, one explicit, one implied. It
18 talks about scheduling, the act of scheduling, and then it talks about doing
19 these software upgrades, which I assume you would say are done in the
20 future. It seems to me that the latter, the upgrades, would not be power
21 reduction, but would be increasing power consumption, leaving me with the
22 word scheduling, the act of scheduling as the example of a power reduction
23 action. Can you please give me your thoughts on that?

24 MR. SHAPIRO: Yeah, we've grappled with this too, and I think
25 there's been some confusion, and maybe the Patent Owner and Petitioner
26 have been talking past each other to a certain extent, because if you -- and I

1 think I understand what you're saying. That if you have an action, all right,
2 and maybe it's a software upgrade that hasn't occurred yet, like in Cooley,
3 where it's scheduled to occur, hasn't occurred yet, and then you decide to
4 reschedule it, you're not reducing a current amount of power consumption,
5 because it hasn't occurred yet, it's not running. And if you do it in the
6 future, you're not reducing power consumption in the future either, right?

7 And so why is this in here, right? Because it's not reducing the
8 current amount of power, and it's not -- I'm sorry. By the way, column 8
9 doesn't use the word current amount of power, but it lists the examples of
10 power reduction activity. In the claim, though, when you're thinking about
11 the claim, the claim does say current amount of -- reducing a current amount
12 of power consumption. And so, the question is, well why -- the Petitioner
13 was saying hey, you know, scheduling non-essential operations, like,
14 rescheduling non-essential operations or postponing non-essential operations
15 like Cooley does is reducing a current amount of power, and they never
16 really explain how it does reduce the current amount of power. And that
17 was, as you recognized, was our argument for why Cooley doesn't
18 anticipate. But remember that this paragraph 8 is talking about power
19 reduction actions, it doesn't say that all of these are current or immediate
20 power reductions. So, and I think -- I'm getting to my answer, by the way.

21 So, I think what's going on here is that this paragraph is a list of
22 power reduction actions that overall are reducing your, the cost of power,
23 right, the amount of power -- so for example, by rescheduling the software
24 upgrades to a time when the spot price of energy is lower, you're reducing
25 the overall price of power consumed. And remember I said, in column 6 the
26 patent talked about triggering immediate power saving operations as well as

1 postponing operations as a function of preferential spot prices. So, I think
2 you can also think of it as power savings in terms of cost. So, it's a little bit
3 broader than this -- the list is broader than immediate power consumption
4 reductions, it's also considering things that would reduce the cost of power,
5 you know, you're reducing your cost of power, which would be
6 rescheduling. And those things are not covered by the claims.

7 And you know, the other thing we've been grappling with is why?
8 Why do the claims say current, right? They could, you know, if they didn't
9 current, then presumably it would read on the things that the Petitioner
10 indicates would fall within the claim. But you know, went back and looked,
11 and if you look at the record, you see in the prosecution history that the word
12 current was added to the claim. So presumably, and I can't say for sure
13 because we didn't prosecute the application, but it was a limitation that was
14 added. So that's really the best I can do in terms of answering the question,
15 does that help at all?

16 JUDGE BARRETT: It helps some. So, are you saying, in the line
17 that you say is in the future, line 61 in that column, scheduling non-essential
18 operations at a different time, do you agree or disagree that the scheduling is
19 the act of power reduction?

20 MR. SHAPIRO: I'm not sure I agree with that, Your Honor, but
21 again, this is a new issue that hasn't been addressed, hasn't been raised by
22 either party, so I haven't had a chance to give it the kind of thought that it
23 would require. My thinking was that this was an overall, how do we make
24 our power consumption more green compliant, right? How do we realize
25 energy and environmental savings? And so, I was looking at it more in that
26 sense, but again, I haven't really given any thought to whether scheduling

1 non-essential operations at a different time is somehow a power reduction
2 action. I mean, it is a power reduction action, but I guess maybe I'm not
3 understanding. Are you asking whether scheduling non-essential operations
4 at a different time reduces a current amount of power, or is it just that it's a
5 power reduction action?

6 JUDGE BARRETT: Well, I was starting with that, is scheduling non-
7 essential operations, is that a power reduction action, since it appears under
8 that introductory part?

9 MR. SHAPIRO: I think yeah, I think that the inventors considered it
10 a power reduction action.

11 JUDGE BARRETT: Okay.

12 MR. SHAPIRO: I think it's very clear from the patent that it's not an
13 immediate power reduction action, it's not an immediate power savings, like
14 I mentioned in column 6, the patent mentions in column 6. It says, you can
15 trigger immediate power savings or you can postpone or otherwise schedule
16 things for later. Those are the ways that it achieves its goals with respect to
17 power consumption. Okay, any other questions, Your Honor?

18 JUDGE BARRETT: Yes. Something that I do believe was discussed
19 was dependent Claim 10, in column 12, if you could look at that briefly?
20 And we won't belabor this, but just help me understand this, because it does
21 use the phrase 'reducing the current amount of consumption,' and you do
22 that by running non-essential services only when the spot price value of
23 electricity is low, which seems to be postponing doing that. And I'm
24 paraphrasing, of course, but it seems to say that reducing a current amount
25 could be postponing.

1 MR. SHAPIRO: Yeah, and it doesn't make sense, right? If you read
2 it the way the Petitioner would like you to read it, in that you're going --
3 basically I think what's happening is, the Petitioner is conflating the
4 limitation in Claim 10 with the postponing or scheduling non-essential
5 operations, because there you're, you know, postponing or rescheduling,
6 right? But this doesn't say postponing or rescheduling, it says running non-
7 essential services only when the spot price is low. So, I look at this
8 differently. It's not those two things, you're running non-essential services
9 when the spot price is low, okay? So how do I reconcile that with reducing a
10 current amount of power consumption? Well, that list in column 8 that you
11 were just referring to, Your Honor, it does talk about non-essential
12 operations in a different part of the list. We already talked about the
13 scheduling, which is what the Petitioner would like you to read into this
14 Claim 10, but Claim 10 doesn't talk about scheduling or postponing.

15 So where else does it talk about non-essential operations? Well, it
16 talks about disabling. Earlier in the list it talks about disabling non-essential
17 services, if you look at line 55. So the answer to your question, the way I
18 read this to make sense -- and by the way, this would fall within one of the
19 immediate power reductions, because you're disabling something that's been
20 running. The way I reconcile Claim 10 with automatically reducing the
21 current amount of power is that you're disabling a non-essential service, if
22 the spot price of electricity is not low. So, you only run it when it's low, if
23 it's not low, you disable it. And I think that obviously it's a doctrine of
24 claim construction that should be, you know, the construction that upholds
25 validity is the correct one. And Petitioner's attempts to read into Claim 10

1 postponing or rescheduling doesn't help us do that. So that would be my
2 answer, Your Honor.

3 JUDGE BARRETT: Okay.

4 MR. SHAPIRO: And -- oh, go ahead, I'm sorry.

5 JUDGE BARRETT: No, thank you. I understand your position.

6 MR. SHAPIRO: Okay, with that, we'll rely on our briefing regarding
7 the claim construction arguments for the other claim constructions regarding
8 current amount, and also for Ground 3, Cooley, because the petitioner did
9 not present any invalidity arguments based on Patent Owner's construction,
10 and therefore if the Board agrees with Patent Owner regarding the meaning
11 of the term reducing a current amount of power consumption, then the
12 independent claims in Claim 3 should be upheld as not anticipated by
13 Cooley. And with that, I'm going to turn the microphone over to my
14 colleague, Mrs. Loizides, so that she can talk about Grounds 1 and 2, and if
15 there's time she can address the motions to exclude and motions to strike.
16 And she's going to -- you didn't get back on, so you're going to use my
17 computer? It's working? Okay, she's going to try to use hers, but if not,
18 we'll need a minute for her to jump on to my computer. Thank you, Your
19 Honors, I appreciate being given the opportunity to discuss these issues.

20 JUDGE BARRETT: Okay, I have you at about 24 minutes remaining
21 of your original time.

22 MR. SHAPIRO: Thank you.

23 MS. LOIZIDES: I'm sorry, Your Honors, my computer seems to be
24 lagging from time to time, and I didn't want the presentation to be
25 interrupted. I apologize for these technical difficulties. So good afternoon
26 Your Honors, this is Nadiia Loizides on behalf of Patent Owner. I will start

1 with Ground 1, but before that I just want to mention that the recurring
2 problem with Petitioner's arguments is that Petitioner's prior art doesn't
3 teach or suggest numerous elements recited in the claims. Petitioner then
4 tries to fill the gaps with uncorroborated statements from its expert, Dr.
5 MacCarley, who is biased in favor of Tesla, and whose statements are mere
6 speculation and classic hindsight. And last, but not least, Petitioner failed to
7 rebut our expert, Dr. Cameron's testimony, because Petitioner chose not to
8 supplement its expert declaration. And now we'll go to Slide 38, which is
9 Ground 1, obviousness under Wang, of Claims 1 through 20.

10 So, under Ground 1, Petitioner challenges Claims 1 through 20 as
11 obvious under a single reference, Wang. And as you have heard before,
12 Claim 1 recites a method for adapting power consumption of a
13 computational device in response to environmental conditions comprising
14 acquiring operating environmental condition data relevant to the generation
15 of electric power and a power grid system from an operating environment
16 feed input. Then, at element 1B, it's analyzing the operating environmental
17 condition data to determine an indication of high demand for electric power
18 from the power grid system. And then at element 1C, a computational
19 device automatically reducing a current amount of consumption of electric
20 power from the power grid system by a computational device, if the
21 analyzing determines the high electric power demand indication.

22 So, in our brief and in our unrebutted testimony of Dr. Cameron,
23 Patent Owner shows that Wang does not teach or suggest Elements 1B and
24 1C, and substantially similar elements in other independent claims. Under
25 Element 1B, a decision engine must perform an analysis to determine an
26 indication of high demand, and under Element 1C, the computational device

1 must automatically reduce the current power consumption, if analyzing
2 determines the indication. Now, indication here is a determination following
3 analysis of operational environmental condition data, and it's not simply
4 evidence or data showing, indicating high demand.

5 JUDGE BARRETT: Counsel? So, you've used the term decision
6 engine, which I don't believe is in the claims, and maybe not even in the
7 specification. Can you please explain to me, when you use that term, what
8 are you talking about?

9 MS. LOIZIDES: I'm sorry Your Honor, could you repeat your
10 question? My speaker was very low.

11 JUDGE BARRETT: Okay, can you hear me now?

12 MS. LOIZIDES: Yes.

13 JUDGE BARRETT: Okay, excellent. So, you've used the phrase
14 decision engine, which I don't believe is a claim term or in the specification.
15 Can you please explain to me what you are calling a decision engine? And
16 put it in terms of claim limitations, please.

17 MS. LOIZIDES: All right, so the claims here require a pretty
18 sophisticated analysis that analyzes a lot of data that utilizes methods of
19 machine learning, and so this is why we believe that the claims require a
20 decision engine to perform those elements. So I would refer Your Honors to
21 Claim 6, the second paragraph, starting with line 21. Column 6, line 21
22 through 45. For example, you can see machine learning techniques on line
23 34, as an example.

24 JUDGE BARRETT: Are you saying that the claims require machine
25 learning? You want to put that limitation in your claims?

1 MS. LOIZIDES: I'm sorry. The claims do not require machine
2 learning, we're saying that the claims show that this is a sophisticated
3 analysis that is performed to determine an indication of high demand.

4 JUDGE BARRETT: Isn't that something that's done by humans all
5 the time?

6 MS. LOIZIDES: We do not believe that humans can perform such
7 analysis and analyze the environmental condition data aggregated into feeds
8 and do all those elements that the specification discloses.

9 JUDGE BARRETT: Well I'm specifically talking about the claimed
10 invention. For example, Claim 1, I don't believe it identifies who the actor
11 is to, for limitations 1A and 1B. It has to acquire, there has to be analyzing,
12 but I don't see that that -- maybe I'm missing it. Tell me why that has to be
13 done by this high level computing system, a decision engine.

14 MS. LOIZIDES: Right, so the decision engine -- I would refer you to
15 Figure 2 of the patent. And you will see the Element 200 and 230, those can
16 act as decision engines determining the indication of high demand.

17 JUDGE BARRETT: Okay, thank you.

18 MS. LOIZIDES: All right. So as I was saying, Claim 1, the
19 determination -- I'm sorry, indication here a determination that follows
20 analysis of operating environmental condition data. And Claim 1 even
21 recites how the indication is determined, by analyzing the operating
22 environmental condition data. Now I would like to quickly address all the
23 points that the Petitioner made when they were talking about Claim 1. And
24 so at first, they jump to Claim 5, saying that there is a model for "may," and
25 that presumably shows that the indication may -- determination. It's not a
26 determination, but an indication. But in Claim 5, that word "may," that

1 refers to unusual weather condition that may result in heavy demand. That
2 model for “may” does not apply to the operating environmental condition
3 data, and not to the indication. In other words, it’s not the data that may
4 result in heavy demand, it’s the weather that may result.

5 MR. SHAPIRO: The argument he made was the indication may, not
6 the -- maybe, clarify that.

7 MS. LOIZIDES: So next, I think the Petitioner’s counsel jumped to
8 Slide 16, and cited our expert’s testimony, also on Slide 15, Slide 12, and 13.

9 And so with -- taking our expert’s testimony out of context, Petitioner
10 argued that an indication can indicate something else, but it doesn’t matter if
11 indication can indicate something else. It matters whether indication, you
12 know, what claim recites, that’s what’s important. Whether or not indication
13 may indicate something else in addition, that’s neither here nor there. And
14 we addressed that argument by Petitioners in our sur-reply on page 11.

15 Then the Petitioner also said that our expert, Dr. Cameron, talked
16 about weather as one of the reasons for power demand to increase. And
17 again, we addressed that in our sur-reply at page 11, and we explained that
18 “may” refers to unusual weather condition, and not indication. Then
19 Petitioner went to Slides 12 and 13, and with Slide 13, he pointed you to the
20 excerpt from Wang that purportedly shows that the user overrides the
21 appliances programming. And according to Petitioner, it doesn’t make sense
22 that the Petitioner would override its own programming. But this is exactly
23 what Wang says. So on page 52 of Wang, in the very same sentence that
24 the Petitioner relies on, it says on line 10, key pad 512 permits user set point
25 programming, and in one embodiment, the ability to override the tariff

1 dependent temperature set point operation. So, the user sets programming,
2 and the user overrides its own programming.

3 And also after that, the Petitioner talked about applied load shed
4 processor 416. We addressed this argument in sur-reply on page 12, and we
5 explained that Wang's processor 416 cannot be the decision engine, because
6 it doesn't perform the analyzing step of the independent power reduction
7 actions based on the result of the analyzing step. At best, it can be
8 configured to extract time references and tariff information from UMC
9 messages, update real time clock, and store received power tariff
10 information. Then, Petitioner said that --

11 JUDGE QUINN: Counsel, can I ask a question?

12 MS. LOIZIDES: Sure.

13 JUDGE QUINN: I noticed that there was a lot of reliance in your sur-
14 reply to your expert's testimony on the decision engines, and I went to the
15 deposition transcript and was able to get better information there as well.
16 But I was wondering if you had taken the deposition of your Petitioner's
17 witness, and I didn't see one for this particular case, and I wanted to make
18 sure that I did not overlook anything. You intended to include it or did not
19 include it or none was taken?

20 MS. LOIZIDES: So, there was no deposition of Petitioner's expert,
21 Dr. MacCarley, taken in this IPR, IPR388. There was a deposition taken in
22 a different IPR that involves the same parties. The Petitioner is Tesla and
23 Patent Owner is Graphite Charging Company. That IPR number is 2024-
24 387. And we relied on that deposition to show Dr. MacCarley's bias. That
25 deposition I believe was filed as one of our exhibits, but we are not relying

1 on it to address the grounds in this IPR, but only to show his bias in favor of
2 Tesla.

3 JUDGE QUINN: Okay, thank you. And my follow up on this
4 conversation you're having about the decision engine, in your sur-reply at
5 page 12, you start with a premise that Claim 1 requires steps 1B and 1C to
6 be performed automatically by decision engines. And I have a question
7 about that, because the automatic wording only appears with respect to
8 limitation 1C, not 1B, so I wanted to know if you have a contention that
9 limitation 1B also needs to have some automatic function. And you can
10 answer that, and then I can ask a follow up on that.

11 MS. LOIZIDES: So the decision engine -- I'm sorry, Your Honor, I
12 will let my colleague answer that, if you don't mind.

13 JUDGE QUINN: I don't mind at all, thank you.

14 MR. SHAPIRO: Okay, let's switch over. Thank you, Your Honors. I
15 apologize for interjecting in the middle of Mrs. Loizides' presentation, but I
16 think you had some questions about decision engine, and Patent Owner
17 acknowledges that the claim does not include the term decision engine and
18 the term doesn't appear in the specification of the '243 Patent. The term
19 decision engine is really being used in more of a shorthand way to
20 distinguish what's going on here from what was going on in the prior art,
21 right, which is described in the background of the patent, where you either
22 have a user making decisions and turning things off or on, or you're
23 basically having a user program a system to react to a value. And our expert
24 used the term decision engine because what he determined as a person of
25 ordinary skill reading this patent is that what's described and claimed is
26 something that's capable of independently making decisions based on this

1 data from these sources. And that's why he's using the term decision
2 engine.

3 And so, to get to your question about, you know, where's the decision
4 engine in the claim, Ms. Loizides correctly explained that look, these steps
5 can be performed by the programmable device 200 in the figure, or can be
6 performed by the computational device, but in any event, what we have is
7 clearly an automated process. A person of ordinary skill in the art reading
8 these claims in the context of the patent would understand that these steps
9 are being performed by a computer. So that's what we mean by that, and I
10 think that answers your question.

11 And if you don't have a follow up on that, I'd also like to add that Ms.
12 Loizides correctly pointed out the deficiency in Mr. Stein's argument
13 regarding Claim 5, in that Mr. Stein indicated that the Claim 5, where he
14 asserted that Claim 5 shows that an indication may not result in the
15 commission of high demand, but that's not what Claim 5, as Ms. Loizides
16 said, the term may in the claim was talking about the weather conditions
17 may indicate high demand, not that the determination of an indication may.
18 A determination of an indication is basically a determination of high
19 demand, of a high demand condition. It's a determination that's made by the
20 system based on the analysis of the data. And so, I just wanted to clarify
21 that.

22 And if you look at the patent, let me just get the right cite. Beginning
23 at column 2, line 66, it says at 102, operating environmental condition data
24 relevant to the generation of electric power is acquired. The acquired data
25 analyzed at 104 to determine whether a high demand for electric power is
26 indicated by the data. So it's pretty clear what the claims are saying when

1 they have a determination of a high demand indication, they analyze and
2 determine that there's a high demand indication, or an indication of high
3 demand. They're determining that there's a high demand condition, right?
4 And so again, my colleague's comment about Claim 5 not supporting
5 Petitioner's argument is right on the mark. I'll hand it back to you now.
6 Thank you, Your Honors.

7 JUDGE QUINN: I did have a follow up question. I don't know if
8 you want to take it or if you want to have your colleague take it? I have a
9 follow-up question and I'd like to -- okay. I'm going to ask my follow-up
10 question and then you can decide who can answer that. In the sur-reply as
11 well, in this concept of what needs to happen in the claim versus what
12 Wang's processor does, you stated that at best, Wang is configured to extract
13 time reference, tariff information, update real time clock, restore the tariff
14 information, and that somehow that is not something that is performed by a
15 decision engine, per se. What more is needed for that to be a decision
16 engine, according to you, and the shorthand that you're using to identify
17 what needs to happen in Wang?

18 MS. LOIZIDES: Right, so in the patent, elements 1B and 1C need to
19 be performed independently, without human user making the final choices,
20 as in Wang. Now, if we go back to Claim 1, again at elements 1B and 1C,
21 you have to have an analysis that determines the high demand indication,
22 and that based on that analysis the automatic reduction happens. Wang does
23 not teach or suggest that. In Wang, everything is focused on the human user.
24 It's the user who is regulating energy consumption. The consumption is
25 subject not to environmental needs, but to the individual user's lifestyle
26 choices. The appliances accommodate the user's lifestyle choices, and they

1 meet consumer's oriented goals, such as personal and comfort. It is the
2 users who modify how appliances work. The users program appliances, and
3 the users can override that programming. In fact, Wang strongly warns
4 against keeping the human user out of the loop to avoid legal liability as a
5 shortcut to avoid regulations and for safety concerns. Now, what --

6 JUDGE BARRETT: Counsel, you're at your original time. You may
7 continue to speak, you'll be cutting into your rebuttal time.

8 MS. LOIZIDES: All right, we will stop here, Your Honor.

9 JUDGE BARRETT: Okay then, I have you at 15 minutes remaining.
10 Petitioner?

11 MR. STEIN: Thank you, Your Honors. I guess I'll pick back up
12 where we sort of left off there, because I think there is a portion of Wang
13 that we've never actually heard Patent Owner try to explain, and I really
14 think it's a very important portion. So if you go to Slide 18 in our
15 demonstratives, you'll see the quotes reproduced there, they're in the lower
16 left corner. And they say, each such appliances configured to use such
17 information in an autonomous manner, and then it says, each appliance is
18 capable of independent load shedding decisions. It uses the same word that
19 they're arguing about with this decision engine. I really feel those quotes
20 are quite compelling and very supportive of the argument I've been
21 presenting today, that this is what Wang teaches. It gets this information, it
22 uses that information, and it makes those load shedding decisions, and then
23 it uses the adjectives autonomous, independent load shedding decisions,
24 which again, I think is very powerful evidence here.

25 And I want to turn back to our discussion of 1B and 1C just for a
26 moment, because I came up with another analogy that I think is helpful.

1 And the way we understand this indication is, it's sort of like a Boolean
2 condition, where I get this operating environmental condition data, so that
3 could be a tariff price, that could be the AESO data that we were looking at,
4 and then you compare it to a threshold. And if you get a true result when
5 you make that comparison, you've indicated high demand. And I think
6 that's the way we've understood things, and the way we've briefed things in
7 our petition, that you do have this data, and you simply make a comparison
8 to see if there is high demand being indicated. And I think I just wanted to
9 make that point as well.

10 And there was a question in my opening about, I think from Judge
11 Barrett, about how the AESO data might be conveyed to the receivers in
12 Wang, and I wanted to return to that just for a minute. So that starts with the
13 petition at page 17, which talks about the RDS/RBDS radio receiver 402.
14 And if you look at the Wang reference and the portions that we've cited
15 there, page 15, lines 14 to 18 of Wang, they state, each appliance can have
16 its own integrated RDS/RBDS or IBOC wireless receiver capable of
17 independent receipt of grid status information. So again, as I was
18 mentioning earlier, our view of that grid status information would include
19 the AESO data. So, there is a conveyance of that data through these RDS
20 and RBDS receivers, and then Wang explains the portions I was just citing
21 again, page 15, lines 19 to 20. Again, Wang says it's configured to use such
22 information in an autonomous manner. And those two statements that I read
23 about the RBDS and the conveyance of the grid status information, and the
24 use of such information, those follow each other in the Wang reference. So
25 those are back to back in the Wang reference. And Wang also has a
26 statement later as well, page 35 lines 4 to 7, where it talks about information

1 on grid operation, which can be data casted via existing RBDS. So, the
2 same structure that the Wang receivers are capable of receiving.

3 Now I wanted to turn to Slide 17 for a minute, because we heard a
4 discussion about -- it's actually an argument that I find fairly confusing, but
5 about this indication being a determination and not data. I think that
6 argument is very hard to accept when you look at the portion that we've
7 reproduced on Slide 17 in the lower right corner. The patent tells you that
8 these power setting indicators can be other data relevant to energy costs.
9 The patent itself tells you that the indicators can indeed be data. And that
10 was consistent with what I was trying to say earlier about this, this Boolean
11 analog as well, which is, I think, a way to understand what I was presenting
12 earlier as well, when you're making that comparison and you get a true
13 result that allows you to have indicated high demand.

14 And there are some examples in this -- because I also had a response
15 to Judge Barrett, just about this "if" in 1C. And there are some other
16 examples in the '243 Patent where different language is used. So for
17 example, Exhibit 1001, column 6, line 14, talk about in response, a high
18 demand indicator may cause the computational device 230 to trigger.
19 Column 4, lines 45 to 49 again use similar language about in response to the
20 indicator. But again, the claim used different language, the claim just says
21 if. So this goes back to what I was saying earlier about in the system that we
22 put together in Wang, which is a combination of Wang's embodiments, you
23 can have different components that perform different aspects of the claim
24 language, and that's consistent with the language and consistent with usage
25 in the specification of different terms.

1 And one final note I'll make on the indication as well, and sort of that
2 Boolean example, we don't see this aggregate feed get introduced until
3 Claim 8. So by virtue of claim differentiation, we also have the claims
4 telling us that there is a difference in scope. Claim 1 covers that, but it's not
5 limited to that example of how you can convey the indicator. Again, I think
6 the example I've come up with now, this Boolean comparison, is --

7 JUDGE QUINN: I'm not -- if you can please back up here for a
8 minute? I'm not understanding, what do you mean by Boolean example?

9 MR. STEIN: So for instance, if we look at the figure that we relied on
10 from the HVAC example, and we're looking at those plots -- let me find the
11 right citation. Page 37 of the petition. So what I mean is, looking at those
12 differences in value, so where you go from a flat line to then the line goes
13 up, and then there's the different time scales on the plot, I'm saying that
14 there's a -- in order for the system to know to adjust the set points, it's going
15 to be comparing that tariff to the setting that the user provided. And again,
16 that doesn't undermine the fact that independent load shedding decisions are
17 still happening. What's happening here is, there's a comparison, if that tariff
18 value goes high enough, then you make these changes to the set point. So
19 that's what I mean by, you can have tariff data and then you can have
20 information based on the tariff data that causes you to make these
21 independent load shedding decisions.

22 JUDGE QUINN: I'm going to stop you right there, because I don't
23 know of any portion of your petition for Claim 1 where you have made an
24 argument about this, where you have actually said that there is a
25 computational comparison between the energy tariff at time 2, in comparison
26 with the energy tariffs at time T1, to make a determination. I don't see you

1 making that argument, so either you show me where it is, or we stop right
2 now.

3 MR. STEIN: Okay, I would look at page 37 to 38 of the petition.

4 JUDGE QUINN: But that's for Claim 3. I want to know what you
5 said for Claim 1 that gave us notice and Patent Owner notice of how the
6 analysis is performed when the HVAC is using that time dependent graph as
7 evidence of an analysis being performed.

8 MR. STEIN: Yeah, I would look to page 31 of the petition, and the
9 paragraph below the figure, which explains how the HVAC makes these
10 adjustments to the temperature set points based on the energy tariff in red.
11 And so in that paragraph, we explain, as illustrated in Figure 10, power
12 pricing increases between T2 and T3, and then we go on to explain more
13 about what we were relying on there. So I would submit that that's where
14 we made that argument.

15 JUDGE QUINN: Okay. What about the issue that, in describing the
16 HVAC operation, Wang says that the tariff rates or the tariff data is received
17 a priori, or prior to making any of these determinations, what would you say
18 about that?

19 MR. STEIN: I'm not sure I understood the question, sorry.

20 JUDGE QUINN: Okay. Do you know where Wang describes the
21 HVAC thermostat environment?

22 MR. STEIN: Yes, and it should be around pages 51 to 52 in Wang,
23 but I can pull it up to check.

24 JUDGE QUINN: And it says at page 51, line 19, in describing that
25 embodiment, it says, in a preferred embodiment when tariffs are known a
26 priori during the summer season, the HVAC controller instructs the air

1 conditioning to lower the temperature below the set point for a short period
2 of time at the beginning of the higher power tariffs.

3 MR. STEIN: Right.

4 JUDGE QUINN: Have you provided an analysis of when the tariff
5 rate is received, and how the application load processor would obtain that
6 information and actually create the graphs that you are relying on?

7 MR. STEIN: I believe that we did, but I want to make sure I find it. I
8 believe that's -- yeah, I'm not seeing exactly that, Judge Barrett, but I do
9 think --

10 JUDGE QUINN: My name is Judge Quinn. I just don't want you to
11 be confused.

12 MR. STEIN: Sorry Judge Quinn, I apologize for that. So, I don't see
13 that specifically, but I do think our reliance there is consistent with the claim
14 language. In terms of whether, the exact time of when you get the tariff rate,
15 I don't think is in the claim.

16 JUDGE QUINN: Thank you.

17 MR. STEIN: Okay, so with that, I did want to spend just the couple
18 minutes that I have left on Ground 3. So if Your Honors could follow me to
19 my demonstratives, and just jump to Slide 47 for me? So this -- Patent
20 Owner did present some argument on this, and I wanted to spend a little bit
21 of time on it as well, because it is a dispositive issue for the Cooley ground.
22 And if you go to Slide 48, as Your Honors already discussed with Patent
23 Owner, this is imposing a temporal dimension on claim language that we
24 think is better understood to be telling us what is being adjusted, not when
25 the adjustment happens. So, when you're looking at the current amount of

1 electric power consumption, you're looking at how you're going to adjust it
2 to make a reduction, you're not limiting it to a particular point in time.

3 One example of that, which is in the patent as well, if you go to Slide
4 50, this is a screen shot from a user manual from the time period noting that
5 things like screen saver waiting times can be quite long. So if you're
6 reducing something like this, the power reduction that's going to happen is
7 still going to be a few minutes away, and could even be more than that away.

8 So this distinction, in our view, is artificial and not tenable to say it only
9 happens in the present. And again, maybe the most compelling piece of
10 evidence on this is Slide 51, which Your Honors already talked about with
11 Patent Owner's counsel, and the fact that the example that they're pointing
12 to as being a future power reduction is something that's within the scope of
13 these claims. So again, that argument should be rejected, given those facts.

14 Yeah, and then Slide 52, we're just explaining how we understand the
15 current amount of consumption of electric power as being the what and not
16 the when. So with that, if there are no more questions, I'll conclude there,
17 and I thank Your Honors for your time today.

18 JUDGE BARRETT: All right, sounds like there's no more questions.
19 Thank you.

20 MR. SHAPIRO: Okay, Your Honors. I'm going to have to mute our
21 other computer here.

22 JUDGE BARRETT: Whenever you're ready.

23 MR. SHAPIRO: Okay. I just have a couple of rebuttal points to
24 make regarding Petitioner's comments. The first is, Petitioner talked about
25 how Wang characterizes its system as autonomous and independent in
26 making load shedding decisions, but on page 16, Wang is, at line 12, Wang

1 is pretty clear when it says “load shedding is then performed based on
2 consumer programming and power tariff rates in force.” So, I don’t think
3 that Mr. Stein’s statements really moved the ball much in terms of what
4 Wang does and does not teach.

5 Also, with regard to Figure 10, Your Honors are correct that when
6 Wang describes this figure, it states that the tariff information is known a
7 priori, and that the system is programmed so that right before the tariff’s
8 change, which is known a priori, it’s programmed to, in the summer, run the
9 air conditioning harder, so that when you then turn off the air conditioning,
10 the house doesn’t get so cold. Or in the winter, to run the heat higher so that
11 when you turn off the heat, the house doesn’t get too cold. So there’s a
12 couple things there, you just program to do something before a time, there’s
13 no decision being made, there’s no determination of a high power indication
14 as required, there’s no analysis and no determination of a high demand
15 indication in Wang based on Figure 10. And the second thing is, in that
16 period before the change in tariff dates, it’s increasing power consumption,
17 not reducing power consumption. So Figure 10 is not helpful to Petitioner’s
18 argument.

19 And then finally, Petitioner I believe said that Patent Owner was
20 arguing that postponing or rescheduling is a future power reduction, but
21 again, there’s, if you are rescheduling an activity to occur in the future,
22 you’re not reducing the power in the future. So, I just wanted to clarify that.

23 And finally, the Petitioner argued that the term current is not temporal, it
24 means what and not when, but as I mentioned previously, and you know, the
25 specification is pretty clear and distinguishes between immediate power
26 savings and those that are not, so what type of amount of power

1 consumption are we reducing? Well, there's immediate, right? Reducing a
2 current amount means present or immediate. It's pretty clear. You read the
3 spec, and that's really the only conclusion you can reach. There's no
4 support at all for Petitioner's position. And really, I think what's really
5 damning to Petitioner is that what they're proposing would require you to
6 basically read the term current out, to give it no meaning at all. Because if
7 you took out the word current, it would read the way they want it to read. So
8 again, it's a doctrine of claim construction that all claims have to be given
9 some meaning. All words in the claim have to be given some meaning. And
10 with that, I think, unless the Board has any questions, we will end our
11 presentation.

12 JUDGE BARRETT: I don't see any questions from my colleagues.

13 MR. SHAPIRO: Okay, Your Honors, thank you very much for your
14 time today, we appreciate the opportunity.

15 JUDGE BARRETT: Thank you. Okay, we are off the record.

16 (Whereupon, the above-entitled matter went off the record at
17 3:31 p.m.)

PETITIONER:

Alexander Stein
Brent Hawkins
Peter Loderup
Nicholas Restauri
MORGAN, LEWIS & BOCKIUS LLP
alexander.stein@morganlewis.com
brent.hawkins@morganlewis.com
peter.loderup@morganlewis.com
nicholas.restauri@morganlewis.com

Paul Margulies
TESLA, INC.
pmargulies@tesla.com

PATENT OWNER:

Jason Shapiro
Michael Siem
Cedric Tan
Lynn Lehnert
Nadiia Loizides
DEVLIN LAW FIRM, LLC
jshapiro@devlinlawfirm.com
msiem@devlinlawfirm.com
cedric.tan@gmail.com
llehnert@goldbergsegalla.com
nloizides@devlinlawfirm.com