

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

GRAPHITE CHARGING COMPANY LLC,
Patent Owner.

Case No. IPR2024-00388

U.S. Patent No. 8,291,243

**PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE TO PETITION
OF U.S. PATENT NO. 8,291,243 (CLAIMS 1-20)**

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. CLAIM CONSTRUCTION	2
A. PO’s <i>aggregate feed</i> construction is wrong	2
1. PO’s construction ignores plain claim language	2
2. PO’s construction excludes embodiments in the specification	3
B. PO’s <i>current</i> construction is wrong	5
1. PO’s own admissions sink its construction.....	5
2. PO’s construction is inconsistent with the specification’s examples.....	6
III. GROUND 3 (COOLEY ANTICIPATES CLAIMS 1, 3, 11, 15, 18).....	8
IV. GROUND 1: WANG RENDERS CLAIMS 1-20 OBVIOUS.....	9
A. Claim 1 is Obvious	9
1. Express Teachings are Sufficient for Rendering Obvious 1[B] and 1[C]	9
<i>i.</i> PO misunderstands the user’s role in Wang.....	9
<i>ii.</i> PO’s argument as to Wang’s <i>indication of a high demand</i> is misguided	12
<i>iii.</i> The claims do not require devices to act “completely autonomously” or to include a “decision engine”.....	15
2. As to Wang’s Tariff-Data Example, PO Has No Response to Necessary Presence of Limitations 1[B] and 1[C] in Wang.....	17
3. Unrebutted Showings as to Wang’s Analysis of Non- Tariff Data.....	18
B. Claim 2 is Obvious	20

TABLE OF CONTENTS

(continued)

	Page
C. Claim 4 is Obvious	22
D. Claim 5 is Obvious	23
E. Claim 7 is Obvious	24
F. Claim 8 is Obvious	26
G. Claim 9 is Obvious	29
H. The Remaining Claims are Obvious	29
V. GROUND 2: WANG-AESO RENDERS CLAIMS 2, 12-14, AND 20 OBVIOUS.....	30
A. Claims 2, 12, and 20 are Obvious	30
B. Claims 13 and 14 are Obvious	31
VI. CONCLUSION.....	32

PETITIONER’S EXHIBIT LIST (new exhibits in *italics*)

<u>Exhibit</u>	<u>Description</u>
Ex-1001	U.S. Patent No. 8,291,243 (“’243 patent”)
Ex-1002	Prosecution History of the ’243 patent
Ex-1003	Declaration of Expert, Dr. C. Arthur MacCarley, Ph.D., P.E.
Ex-1004	Curriculum Vitae of Dr. C. Arthur MacCarley, Ph.D., P.E.
Ex-1005	PCT Patent App. Pub. No. 2006/096854 to Wang et al. (“Wang”)
Ex-1006	Archived Copies of Published Data from the Alberta Electric Supply Operator (“AESO Report”)
Ex-1007	U.S. Patent No. 9,052,904 to <i>Cooley et al.</i> (“Cooley”)
Ex-1008	Order on Reexamination for Control No. 90/019,303
Ex-1009	Federal Court Management Statistics – Profiles (Sept. 30, 2023)
Ex-1010	District Court Complaint (Aug. 4, 2023)
Ex-1011	Motion for Extensions of Time (Jan. 26, 2024)
Ex-1012	Alberta Electrical Supply System Study (Oct. 2004)
Ex-1013	Alberta Electric Supply Operator – Help Page (Mar. 2007)
Ex-1014	RSS Article (Sept. 13, 2006)
Ex-1015	History of Power Article (Oct. 1, 2022)
Ex-1016	U.S. Patent No. 5,673,497 to St. Louis (“St. Louis”)
Ex-1017	Alliance Laundry Systems – Home Laundry Dryers Service Manual (Apr. 2002) (“Service Manual”)
Ex-1018	Internet Archive Affidavit (Feb. 7, 2024)

Petition for IPR of U.S. Patent No. 8,291,243
Case No. IPR2024-00388

<u>Exhibit</u>	<u>Description</u>
Ex-1019	<i>Ex Parte</i> Reexamination Order (Dec. 12, 2023)
Ex-1020	Office Action Response (July 11, 2024)
Ex-1021	Final Office Action (Aug. 21, 2024)
Ex-1022	Notice of Existence of Concurrent Decision Relating to U.S. Patent No. 8,291,243 (Sept. 6, 2024)
Ex-1023	Office Action Appendices including Proposed Interview Agenda and Claim Amendments
Ex-1024	Response to Final Office Action (Sept. 11, 2024)
<i>Ex-1025</i>	<i>Copy of February 11, 2025 Deposition Transcript of Dr. Kirk W. Cameron</i>
<i>Ex-1026</i>	<i>Re-Exam Office Action for Control No. 90/019,303</i>
<i>Ex-1027</i>	<i>Inspiron 1210 Quick Reference Guide (July 2008)</i>

I. INTRODUCTION

Faced with ample evidence of unpatentability for claims 1-20, Patent Owner (“PO”) in its Patent Owner’s Response (“POR”) asks the Board to adopt incorrect constructions for two terms (*the aggregate feed* and *current*). PO twice commits the same mistakes (reading out embodiments and ignoring claim language) and, thus, its constructions cannot be accepted. *Infra* Section II. With one, PO seeks to hide from the Cooley-led anticipation ground and, with that construction dismissed, the Cooley-led ground stands un rebutted.

As to the Wang-led obviousness grounds, PO asks the Board to ignore Wang’s oft-repeated teachings of “autonomous” load shedding just because Wang says a human can remain “in the loop” (Ex-1005, 35:11-14) in some embodiments. But a “reference stands for all that it teaches to those of ordinary skill in the art.” *In re Fritch*, 972 F.2d 1260, 1264-65 (Fed. Cir. 1992). Disregarding Wang’s clear “autonomous” teachings would invite legal error, and, regardless, PO’s characterizations of Wang are incomplete and incorrect. *Infra* Section IV.A. PO also fails to rebut many of the Petition’s arguments (*infra* Section IV.B-G) and, as to the dependent claims, asks for a long-ago-rejected rigid application of obviousness (*infra* Section IV.B).

The claims are all obvious. Many are anticipated too. The Board should cancel claims 1-20.

II. CLAIM CONSTRUCTION

A. PO's *aggregate feed* construction is wrong

PO construes the claimed *aggregate feed* as “a feed combining data from a **plurality of other feeds**” (POR 10-11),¹ while Petitioner says that this “simply refers to a feed for delivery of the high demand indicator, as well as other information.” Pet. 56. The dispute here is narrow—whether data in the aggregate feed must come specifically from “a plurality of other feeds.” As explained below, PO's position is undermined by the specification and the claim language and should be rejected.

1. PO's construction ignores plain claim language

Claim 8 adds two method steps to claim 1. First, a weighted function is applied *comprising a linear combination of values obtained from a plurality of different feeds*. Second, *if the linear combination is above a certain threshold*, then *the high demand indicator* is included in *the aggregate feed*. Claim 8 first recites a *plurality of different feeds* and then later and—separately—recites *the aggregate*

¹ Emphasis added throughout, unless indicated otherwise.

feed.² The claim language does not limit *the aggregate feed* to a plurality of other feeds, as PO proposes. Indeed, the drafter knew how to recite different feeds, but chose not to restrict *the aggregate feed* in that way. Claim 8 also says that *a weighted function* is applied to values *obtained from a plurality of different feeds* to determine whether to include *the high demand indicator in the aggregate feed*; it does not say that *the aggregate feed* must specifically include the recited *values obtained from the different feeds*.

And, critically, claim 8 specifies that at least one thing must be included in the aggregate feed—*the high demand indicator*. Yet PO excludes this very thing from its *aggregate feed*. POR 11.

PO's construction of *the aggregate feed* is inconsistent with the claim language, and, for this reason alone, the construction is wrong.

2. PO's construction excludes embodiments in the specification

Furthermore, PO's construction is wrong because it would exclude preferred embodiments, which is “rarely, if ever, correct.” *Vitrionics v. Conceptronic*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). The specification describes that “[t]he service provider publishes or pushes an **aggregated data feed** (for example at 108 of FIG. 1 above),

² As in the Petition, *italicized* language is claim language (outside of citation signals and case cites). Pet. n.2.

including **aggregating feeds or data** from any individual service providers” Ex-1001, 4:41-44; *see also id.* at 4:66-5:2 (“acquire **feeds or other** power-generating contextual, environmental or operating **information and data** from one or more feed/data providers”). By specifying that the aggregate feed can include “feeds or data,” the specification of the ’243 patent delineates that the specification covers embodiments where the aggregate feed can include just “data from any individual service providers.” *Id.* at 4:41-44. And so, the data need not come from any feeds at all, let alone “a plurality of other feeds,” as PO prescribes. POR 11. PO’s expert confirmed that this portion of the patent means that “it could be only feeds; it could be only data; it could be both.” Ex-1025, 251:14-252:8; *see also id.* at 249:9-250:10 (PO’s expert noting generally that “or” in the ’243 patent refers to alternative options).

Wang also describes embodiments where “[t]he module 200 is configured to acquire **feeds or other** power-generating contextual, environmental or operating **information and data** from one or more feed/data providers 280, the module 200 further configured to aggregate a feed inclusive of high-demand indicators and publish **the aggregate feed** through a communication means 282 to the computational device 230....” Ex-1001, 4:66-5:7; *see also id.* at 6:46-48 (“After analysis a feed aggregator logic component 206 within the memory 203 **aggregates data** from various providers...”).

Because it excludes the specification’s “only data” embodiment described by its own expert, PO’s construction is further incorrect.

B. PO’s *current* construction is wrong

PO argues that the intrinsic evidence of the ’243 patent supports construing *current* to impose a temporal requirement as to when the computational device reduces power consumption. POR 12-13. It does no such thing, as explained below.

1. PO’s own admissions sink its construction

PO identifies an example of “scheduling nonessential operations at a different time,” which per PO, cannot be within the scope of the claims since it allegedly “takes place in the future.” POR 12. The claims refute this position.

Dependent claim 10 encompasses this very example—by reciting *automatically reducing the current amount of consumption of electric power from the power grid system by the computational device comprises **running nonessential services only when** the spot price value of electricity is low.* Ex-1001, 12:7-12. The claims thus do not exclude—and, in fact, explicitly include—what PO labels “future” power reductions. POR 13. There is no temporal requirement for when the power reduction occurs, instead the complete phrase *current amount of consumption* specifies what is being reduced, not when that reduction is made. PO’s argument that current means “occurring in or existing in the present time,” POR 12, just

reinforces that the current amount is the “what” and not the “when” in this power-saving equation, and if anything refers to the immediate past rather than the immediate future.

The adjective *current* modifies *amount of consumption*; it does not modify the automatically reducing so the *current* adjective modifies what is being reduced not when the reduction happens. In other words, the *current amount of consumption* (e.g., a value of X mW of power usage) gets reduced to a smaller amount (e.g., a value of X/2 mW of power usage). The claim does not say exactly when that must happen and neither does the specification (as explained next).

2. PO’s construction is inconsistent with the specification’s examples

PO cites various portions of the ’243 patent and says that all of these provide “examples of power reductions that take place in the present.” See POR at 12 (including a bulk citation to Ex-1001, 1:61-67, 2:66-3:7, 5:32-43, 6:21-33, and 8:41-60). But none of the statements from 1:61-67, 2:66-3:7, 5:32-43, 6:21-33 say anything about present or future power reductions at all. See, e.g., 5:32-43 (discussing a process for updating “internal state tables”). The other examples do not say when the listed power reductions occur, let alone that they all must take “place in the present as opposed to some future time” (POR 12) as PO urges.

In any case, the purported distinction between future and present power reduction actions is not a tenable distinction. For example, as to “**reducing a waiting time before the computer system 304 enters a hibernation or a standby mode,**” suppose the current waiting time (e.g., for turning a screensaver on at a laptop) is 10 minutes when the decision to make a power reduction action is made and the waiting time is then reduced to 2 minutes. *See generally* Ex-1027 (noting user adjustments to screensaver wait times on a sliding scale including 10 minutes). For that power-reduction action to have any impact on the consumption of power by the computer system, another 2 minutes would need to pass beyond the time taken by the computer system to make the change to the waiting time. And this waiting period was likely longer, as PO’s expert conceded that “it wouldn’t have been uncommon for you to set up a setting [for the waiting time] to be minutes **or an hour.**” Ex-1025, 326:10-327:10. Stated differently, even the simplest action takes some non-trivial amount of time to complete. Thus, after passage of that non-trivial amount of time, the present has become the past and the future has taken shape. PO’s expert conceded at his deposition that for certain power-reduction operations, such as “turn[ing] off memory,” that “[i]t’s not instantaneous” even if “less than seconds.” Ex-, 134:6-9.³

³ There are only four usages of *current* in the specification (aside from the claims) and none imposes a temporal restraint. *See, e.g.,* Ex-1001, 2:13-18 (discussing

Moreover, even if PO were correct about the examples from the '243 patent imposing temporal requirements on occurrence of the power reductions (they do no such thing), the law would still not allow importing the specification's examples into the claims. *Laitram v. NEC*, 163 F.3d 1342, 1347 (Fed. Cir. 1998). The specification of the '243 patent itself makes that clear, noting: “[t]he foregoing description of various aspects of the invention has been presented **for purposes of illustration and description**. It is **not intended to be exhaustive** or to limit the invention to the precise form disclosed... .” Ex-1001, 10:49-52.

* * * *

For all the reasons above, PO's constructions are without merit and should be rejected.

III. **GROUND 3 (COOLEY ANTICIPATES CLAIMS 1, 3, 11, 15, 18)**

PO's positions against Ground 3 rely entirely on its faulty construction of *current* (POR 48-56). With that construction rejected (*supra* Sections II.B.1-4), PO has nothing else to say against Cooley's anticipation of claims 1, 3, 11, 15, and 18.

“the **current** invention for adapting the power consumption of a computational device”).

IV. GROUND 1: WANG RENDERS CLAIMS 1-20 OBVIOUS

A. Claim 1 is Obvious

PO's argument regarding claim 1 rests on an erroneous characterization of "tariff data"—one example of *operational environmental condition data* analyzed by Wang. But PO fails to undermine the Petition for three reasons explained below. *Infra* Section IV.A.1-2. Separately, PO ignores Petitioner's position that Wang expressly discloses other types of *operating environmental condition data*. Those un rebutted positions are dispositive as to limitations 1[B] and 1[C]. *Infra* Section IV.A.3.

1. Express Teachings are Sufficient for Rendering Obvious 1[B] and 1[C]

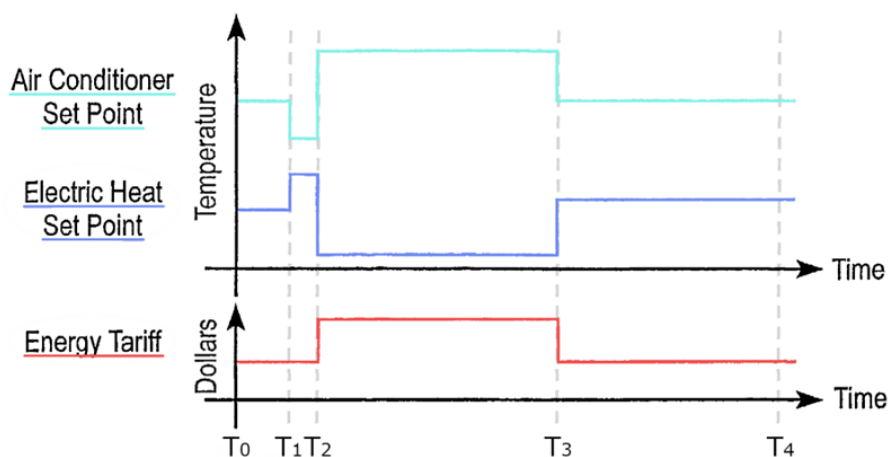
***i.* PO misunderstands the user's role in Wang**

PO erroneously argues that Wang does not disclose limitations 1[B] and 1[C], because Wang indicates that a user may have some role in configuring the appliances to perform their autonomous operations. POR 14-19. PO's argument relies on an embodiment in Wang where a user encodes cost/convenience trade-offs through a suitable man machine interface (MMI). POR 15. PO is wrong.

Wang makes clear that its programmable appliances are configured for "disseminating power tariff information" to "microcontrollers embedded in

appliances,” such that the *appliances*—not the user—can “use this information to regulate appliance usage in a manner as to minimize utility costs.” Ex-1005, 41:5-22. Although the user may provide settings “to accommodate user life style choices,” Wang is unequivocal that the appliances themselves use those programmed settings to perform automatic load-shedding operations (e.g., to “fully power the elements during low tariff times only”). *Id.*

The user’s role in some of Wang’s embodiments is to establish overall threshold preferences, which the Wang modified system then implements (e.g., the user determines what the thresholds are for “high” and “low” tariff rates and sets temperature set points that correspond with the “high” and “low” tariff thresholds they selected). *See, e.g.,* Ex-1005, 51:11-52:5 (noting that “[i]n some embodiments the high and low tariff temperature set points for both the air conditioner and heater on either side of the low-to-high tariff transition are **consumer configurable**”). After a user makes threshold settings, the system in Wang, not the user, performs automatic load-shedding decisions based on those settings autonomously, including for load-shedding decisions. *See, e.g., id.* at 52:6-20 (noting that “[i]n the summer months application processor 416 controls the air conditioner relay, and in the winter months application processor 416 controls the electric heater” based on “tariff dependent temperature set point operation”). Pet. 26.



Existence of an override function in Wang further supports automatic load-shedding by Wang’s appliances. The user has “the ability to override the tariff dependent temperature set point operation.” Ex-1005, 52:10-13; *id.* at 16:16-17 (“appliances are equipped with a user activated override feature that permits the bypass of load shed operation”). In Wang, the user manually can override something that is otherwise automatically performed by the appliances.

To the extent PO’s position is that the claims do not permit any manual user input in the claimed load-shedding process, they simply do not require an absence of manual user input. PO’s own expert explained that the ’243 patent contemplates embodiments of power-reduction actions that involve user input. For example, PO’s expert conceded that the system of the ’243 patent may modify and/or utilize settings (e.g., a waiting time) that are defined by a user (i.e., by configuring settings of a low-

power mode of the device). *See, e.g.,* Ex-1025, 324:12-325:22 (noting that the “waiting time” described at line 51 of column 8 of the ’243 patent can be “user defined,” that “it can be,” for example by “selecting an option that includes that” when a device is “going to go into a low power mode”).

Nonetheless, PO demands that all functions performed by Wang be “completely autonomous” (POR 17)—again, the claims have no such requirement. But even if the claims require completely autonomous behavior (they do not), Wang’s repeated, express teachings related to autonomous operations suffice as at least some embodiments in Wang would be completely autonomous or it would have been an obvious change to automate any manual operations. *See Palo Alto Networks v. Centripetal Networks*, IPR2021-001148, Paper 40, 34 (noting that “[a]utomation of a process to replace a manual activity is generally obvious, absent special circumstances” in finding claims directed to automatic generating of packet-filtering rules unpatentable).

ii. PO’s argument as to Wang’s indication of a high demand is misguided

PO next argues that Wang fails to teach *an indication of a high demand*, alleging, for example, that “tariffs are not always indicative of demand.” POR 16. PO goes on to allege that “tariff rate data is not a high electric power demand

indication—it is data that may be used to determine a high electric power demand indication.” POR 18. Thus, PO seems to be arguing that this *indication* must only indicate one thing, i.e., high demand for electric power from the power grid system. However, the claims do not say that and do not require that either.

PO’s interpretation is also inconsistent with the claims and the specification. Claim 1 merely requires *an indication* not a correct determination of high demand for electric power. This is also consistent with claim 7, which recites that the *indication of high demand* is determined if *the operating environmental condition data feed information indicates a relatively environmentally-friendly energy producer is near its output capacity*. Claim 7 does not require that this relatively environmentally friendly energy producer be near its output capacity solely because there is a high demand for electric power. Instead, this data point is sufficient to **indicate** a possibility of high demand for electric power, but it could also indicate other things. PO’s own expert also confirmed as much. *See, e.g.*, Ex-1025, 276:20-277:13 (PO’s expert noting that “even though [a relatively environmentally friendly energy producer reaching output capacity] says *something* ... it’s one among many” and that simply having “data with one among many being at capacity, it **doesn’t really tell me anything about whether I’m under a high demand condition or not**”).

Claim 5 also illustrates that *the high electric power demand indication*⁴ need not be an absolutely correct indication. It recites that *the analyzing* step of claim 1 is determined based on *an unusual weather condition that **may result** in heavy demand for power*. This could not be clearer—the *unusual weather condition* of claim 5 *may result in heavy demand* or **it may not**. PO’s expert admitted this too. Ex-1025, 262:1-24 (noting that as to claim 5, “**weather can be a reason for power demand to increase, but it may not be the only reason, right, or it may not be – it may not track exactly.**”). The claims do not require an absolutely correct determination of high demand—just *an indication* of such. Nothing more.

This conclusion follows from the specification’s examples too. For example, there are various examples of “indicators” of high demand that can also indicate other things (e.g., “a spot price of electricity”; “weather conditions”; “time of day”; and energy use of a facility or based on census data). Ex-1001, 4:51-57. The specification does not require that these indicators indicate only one thing (let alone correctly indicate that one thing). *See id.* at 4:50-52 (noting that each example can function as “environmental data inputs ... or as power-setting indicators”). PO’s expert conceded that “price doesn’t always follow demand” when asked whether the

⁴ This term lacks antecedent basis in claim 1. For this proceeding only, it is assumed that this refers to *an indication of a high demand for electric power* recited earlier.

spot price of electricity being high is “always indicative of high demand.” *See* Ex-1025, 260:2-261:14 (noting that “[spot prices] don’t directly correlate always to – high demand,” and that “there’s a lot of reasons that the price could increase that have nothing to do with the demand for power.”).

PO’s position is thus contradicted by the claims and the specification. It should be rejected.⁵

iii. The claims do not require devices to act “completely autonomously” or to include a “decision engine”

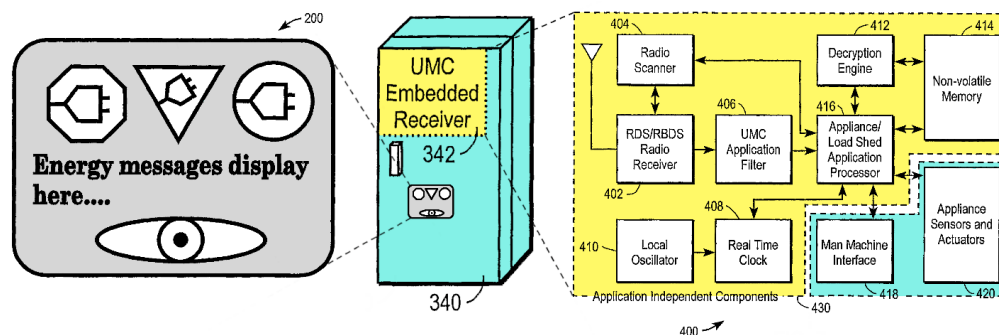
PO also contends that the claims require “completely autonomous” load-shedding operations performed using a “decision engine.” POR 16, 18. They do not. Rather claim 1 recites *a computational device automatically reducing a current amount of consumption of electric power from the power grid system by the computational device* based on the high demand indication. Wang teaches automatic operations (Section IV.A.1) and thus PO’s semantic shuffling on “autonomous” is irrelevant. Even PO’s expert conceded “[a]utomatic’ is a bit more precise because

⁵ PO also suggests that the Petition used tariff data alone as the high demand indicator. POR 18-19. That is wrong. The Petition said that this indicator could be “**based on** tariff rate data.” Pet. 34. To the extent PO is implying some specific structure for the recited *indication*, the claims impose no structural details, and the specification provides no structural examples either.

it describes something that is an automated process, **meaning it takes place typically without user intervention.**” Ex-1025, 254:19-255:14. Wang performs automatic load-shedding operations without user intervention (Section IV.A.1(i)-(ii)).

PO’s expert also explained that an “analytic decision engine” could be an “application-specific processor” or a “microprocessor,” Ex-1025, 239:17-240:11. Wang teaches that—an application/ load shed processor 416. Pet. 24.⁶

PO also separately discuss aspects of Wang’s display 200, but the Petition relied on each of Wang’s smart appliances as a respective whole (including the display 200 and an embedded UMC receiver) as *the computational device* in the claims. *See generally*, Pet. 16-33. This is depicted below:



⁶ PO mentions a “teaching away” based on its misunderstandings of Wang. Regardless, PO has not demonstrated a legally sufficient “teaching away.” *Galderma v. Tolmar*, 737 F.3d 731 (Fed. Cir. 2014) (no teaching away if “merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into the invention claimed”).

Pet, 16.

Importantly, claim 1 says the *computational device* does the *automatically reducing* step, but it does not specify what does the *analyzing* operation, thus permitting different components of the overall *computational device* to perform different aspects of the claim (e.g., the display 200, as one component of Wang’s smart appliance, can display a high demand indicator; while another component—the embedded UMC receiver with an appliance/ load-shed processor—can perform the automatically reducing operation for the overall *computational device*). Pet. 16, 28-29.

**2. As to Wang’s Tariff-Data Example, PO Has No Response to
Necessary Presence of Limitations 1[B] and 1[C] in Wang**

As PO correctly points out, the Petition argued that “[a]nalyzing operating environmental condition data is necessary for autonomous operation and independent load-shedding based on that data” in Wang. POR 14. Wang teaches that its smart appliances “use such information in an autonomous manner” and conduct “independent load-shedding decisions.” Pet. 23 (citing Ex-1005, 15:13-27). Wang’s appliances necessarily analyze the relied-upon tariff data (and the other operating environmental condition data identified in the Petition) and, tellingly, PO has no contrary interpretation of these two dispositive quotes from Wang. *See Hospira v. Fresenius*, 946 F.3d 1322, 1329 (Fed. Cir. 2020); *MOM Enterprises v. R*

Vieth, IPR2023-00726, Paper 112, 32-33 (Board finding a limitation to be inherently obvious).

3. Unrebutted Showings as to Wang’s Analysis of Non-Tariff Data

PO fails to offer any rebuttal about Wang’s analysis of non-tariff data noted in the Petition. This is not surprising—its disclosure in Wang is irrefutable.

For example, PO’s arguments with respect to 1[B] ignore the Petition’s assertions as to the AESO data and Wang’s analysis thereof. Before the Petition addressed limitation 1[B], it first established that Wang provides many examples of *operating environmental condition data*, including grid status and reliability and critical weather events. Pet. 15. Thus, tariff data was one example, but it was not the only one.

As to the non-tariff example of AESO data, the Petition next established for limitation 1[B] that AESO data was “taught or suggested as being analyzed to make determinations regarding demand for electric power,” that are then provided to Wang’s application processor to process the data and adjust power consumption accordingly. Pet. 25-26. The Petition provided a specific example of this—namely, a POSA would have recognized that respective columns from the AESO data (including the example provided in the Wang reference, reproduced below) could be

used to determine “whether a particular generator – and, collectively, the entire grid – is experiencing high demand.”

Table 1 - Utility information for the AESO electric grid on March 7, 2005

<u>Alberta Total Net Generation</u>	7993
Interchange	15
<u>Alberta Internal Demand</u>	7978
<u>Alberta Load Responsibility</u>	7262
Contingency Reserve Required	498
Dispatched Contingency Reserve (DCR)	502
Dispatched Contingency Reserve –Gen	345
Dispatched Contingency Reserve –Other	157

Table 3 - Utility information for AESO hydroelectric generators on March 7, 2005

HYDRO			
UNIT	<u>MCR</u>	<u>TNG</u>	DCR
▶Bighorn Hydro	120	34	10
▶Bow River Hydro	319	165	26
▶Brazeau Hydro	350	43	128
▶CUPC Oldman River	32	7	0
▶Chin Chute	11	0	0
▶Irrican Hydro	7	0	0
▶Raymond Reservoir	18	0	0
▶Taylor Hydro	12	0	0

Pet. 25-26.

Thus, as to limitation 1[B] the Petition’s showing related to AESO data is un rebutted. And the Petition notes that as to 1[C], the data from the AESO report

can be provided to the application processor 416 to process and “adjust[] appliance power consumption accordingly.” Pet. 26.

* * * *

Claim 1 is obvious and the POR does not disturb that conclusion.

B. Claim 2 is Obvious

PO criticizes an alleged lack of “supporting evidence that information regarding peaking plants would have been available” and alleged reliance on “generic references to peaking plants.” POR 20. Neither criticism has merit.

First, the Petition provided “supporting evidence” including the AESO data that appears in Wang directly (Ex-1005, 35:30-37:4), the patent’s own admissions (Ex-1001, 3:58-62), and general knowledge dating to the 1900s. Ex-1003 ¶98 (citing Ex-1015, 1-2). Taken together, this supporting evidence shows that peaking plants were well known, their relationship to grid demand was well known, and specific data points on total net generation (TNG) and maximum continuous rating (MCR) for peaking plants were being distributed to Wang’s smart appliances too.⁷ PO disputes none of this.

⁷ Pet. 35 refers to the analysis in the Petition’s Sections 9.1.2-4, including related to the use of MCR and TNG data.

Second, the Petition did not rely on “generic references to peaking plants ... [to] imply that a small-size fossil fuel plant is coming on-line” (POR 20)—the Petition did rely on the specific data from AESO (or other sources). Pet. 35-36. As explained by Dr. MacCarley, a POSA would have realized that data published in the real-time AESO reports (e.g., TNG values) “could be monitored to determine whether a particular power generator was coming online,” by observing in a first publication that a particular generator’s TNG value is zero “indicating that the generator was offline,” and observing in a subsequent publication of the AESO data a positive TNG value which “would indicate that the generator was coming online.” Ex-1003, ¶103.

Put simply, PO’s positions demand the type of rigid obviousness analysis that was eliminated long ago. *KSR v. Teleflex*, 550 U.S. 398, 415 (2007). “A person of ordinary skill is also a person of ordinary creativity, not an automaton,” *Fleming v. Cirrus Design*, 28 F.4th 1214, 1223 (Fed. Cir. 2022) (citing *KSR*, 550 at 421), and assembling those well-known elements together is fundamentally obvious, particularly to the ordinarily creative POSA. *Caterpillar v. Wirtgen*, IPR2018-00155, Paper 13, 35-36 (noting “it is well-settled that one of ordinary skill can use his or her ordinary skill, creativity, and common sense to make necessary adjustments and further modifications to result in a properly functioning device”).

Claim 2 is obvious and the Petition proved that.⁸

C. Claim 4 is Obvious

The POR says, “a POSITA would understand that a reference to **XML does not imply that as RSS feed is being used....**” POR 22. But the Petition never argued this. *See* Pet. 40. The Petition did explain that Wang’s off-site tariff servers can be “realized as an XML or HTML web server” (Pet. 51-52), that other data (including weather data) would have obviously been included with these servers (Pet. 39), and then concluded that “an RSS feed was one of a finite number of known protocols for communication of XML or HTML web server data” and further that “a POSA would have been motivated by Wang’s description of the servers 354 transmitting XML data over the internet to at least try using a well-known technique like RSS.” Pet. 40.

All of this was supported by Dr. MacCarley’s considered opinions (Ex-1003, ¶¶114-117) and his citation to contemporaneous evidence establishing that RSS was not only well-known, but notoriously so. Ex-1004 (noting that RSS had “taken the Web by storm,” was commonly “used to provide news to either people or

⁸ PO’s expert also said, “there’s no good definition” of a small size plant and that discussions about “small power plants” or “small-sized fossil fuel plants” are “pretty subjective” noting that “it’s pretty subjective terminology.” Ex-1025, 377:25-378:23. If his opinions rest on subjective interpretations of claim language, the Board should reject them.

organizations” by “serving an ‘RSS feed’ from a website,” and explaining that an “RSS fee is simply a link to an XML file that is structure in a certain way”). The ’243 patent even admits that “XML files us[e] standard RSS notations.” Ex-1001, 4:38-41.⁹ And PO was reminded of this fact by the Patent Office too. Ex-1026, 10 (reexam examiner noting that “a person of ordinal skill in the art (POSA) would have recognized that RSS feeds were common method of sending updated information”).

By only arguing whether XML implies use of RSS (which was not argued), PO overlooks what the Petition did argue and leaves those articulated positions unrebutted.¹⁰ Claim 4 is obvious.

D. Claim 5 is Obvious

PO alleges that the “critical weather warning” in Wang is meant only to present information to the user. POR 23 (noting that “[a] POSITA reading Wang would understand that the ‘critical weather warning’ is merely sent to a display for

⁹ At his deposition, PO’s expert avoided admitting that RSS was notoriously well-known, but even he still conceded that some POSAs “would” be familiar with RSS, even if “some wouldn’t.” Ex-1025, 408:18-409:10.

¹⁰ As to the point PO does raise about “many uses of XML that do not require RSS” (POR 22), to the extent that can apply to the obvious-to-try rationale from the Petition (which PO did not argue), PO’s examples are from contexts that have nothing to do with Wang’s tariff servers.

the individual user's benefit"). But PO's arguments regarding the displaying purpose of the "critical weather warning" are not responsive to the arguments in the Petition. Pet. 40-41.

Although Wang discusses presenting information at the display to convey that the power grid is overloaded or "in danger of becoming overloaded," it also discusses providing the same environmental condition data to an "Appliance/Load Shed Application Processor," which can "then use that information 'to execute application code specific to the appliance within which the [the processor 416] is embedded.'" Pet. 24. PO's expert conceded there was a well-known connection between weather and power demand—noting "the fact [a critical weather warning] causes stress on the power grid is pretty commonly known." Ex-1025, 335:13-25.

Thus, a POSA would have recognized that the "critical weather warning" presented by Wang's display 200 is also used by Wang's appliance/ load-shed processor 416 to make load-shedding decisions.

Claim 5 is obvious.

E. Claim 7 is Obvious

PO argues "Wang merely discloses that the AESO information can be published to the user display 200 so that the user 'can make informed decisions on when to use power.'" POR 25. But that contradicts Wang's express teachings,

because Wang notes the AESO data can be used to “get such information in front of people **and their appliances.**” Ex-1005, ¶0113. Wang also describes how the information would typically be interpreted, noting that “users would postpone energy consuming tasks to those points in time when more renewable energy resources were used to generate power.” Ex-1005, ¶0116.

Table 2 - Utility information for AESO wind generators on March 7, 2005

WIND AND OTHER			
UNIT	MCR	TNG	DCR
▶APF Athabasca	99	52	0
▶Castle River #1	40	37	0
▶Cowley Ridge	38	33	0
▶Drayton Valley	11	0	0
▶Grande Prairie EcoPower	25	6	0
▶McBride Lake Windfarm	75	70	0
▶Summerview	68.4	62	0
▶Suncor Magrath	30	29	0
▶Westlock	17.5	0	0
▶Whitecourt Power	25	23	0

Pet. 49-51. Further, PO does not rebut the Petition’s arguments (Pet. 50-51) that a POSA could use Table 2’s data (above) to identify whether *a relatively environmentally-friendly energy producer is near its output capacity.*

PO’s remaining contentions are no different from its positions for Wang’s disclosures of high demand indications, and are wrong for the same reasons. *Supra* Section IV.A.1.

Claims 7 and 17 are obvious.

F. Claim 8 is Obvious

Each argument raised in the POR as to claim 8 (POR 26-36) is wrong, as explained below.

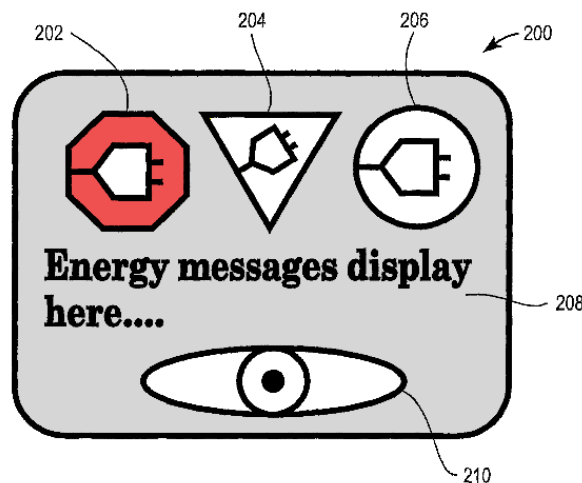
PO asks the Board to ignore Dr. MacCarley's testimony as allegedly unsupported. POR 26-28. This is not unsupported testimony (as highlighted below, Dr. MacCarley adds helpful discussions of various points to provide factual context). *See, e.g., Google v. Flypsi*, IPR2023-00360, Paper 33, 20-21 (rejecting PO's arguments to categorically disregard an expert's testimony and noting "*Xerox* does not provide a blank condemnation of declaration testimony that is identical or virtually identical to language in a paper").¹¹

PO then challenges three select portions of the Petition's challenge to claim 8. Each fails.

First, PO challenges the Petition's assertion that the limitations of claim 8 would have furthered the goals of Wang, alleging that "by withholding the

¹¹ Dr. MacCarley's supporting of students (Ex-2013, 79-80:25-1) reflects a sincere desire for their success, and is not disqualifying bias (POR 56-57). He testified that Tesla "didn't give us money, nor did they offer to give us money." *Id.*, 81:19-23. Dr. MacCarley is a well-respected professor and has sworn to his financial disinterest here. Ex-1003, ¶¶4-15. Nothing more is required. *See, e.g., Trans Ova v. XY*, IPR 2018-00250, Paper 35, 10; *Offshore Technical v. Innovative Pressure*, IPR2020-00923, Paper 43, 16-18.

underlying information ... and instead providing an indicator in an aggregate feed,” it would “frustrate Wang’s alleged goal” by “taking the customer out of the loop.” POR 28-29. Because PO fundamentally misunderstands the user’s role in Wang (Section IV.A.1(i)), its arguments fail. PO’s position also relies on an unstated premise that the aggregate feed cannot include a visible indication. The indicator in Wang’s aggregate feed example for the display 200 is visual (shown below) and the claims do not preclude this.¹² Pet. 56-59.



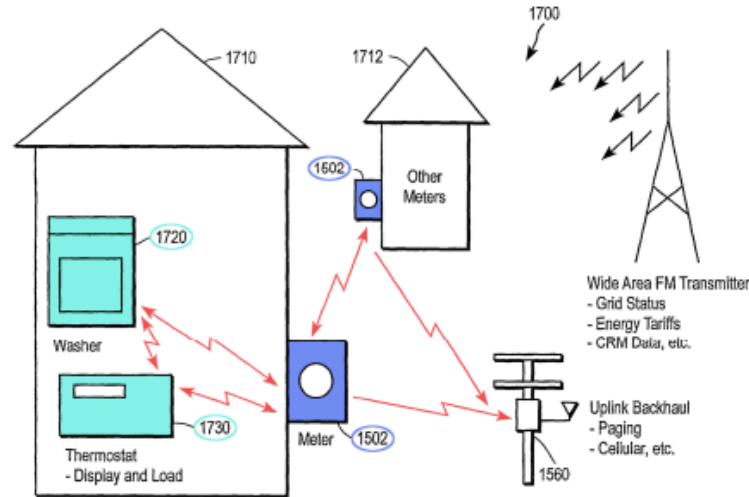
Second, PO alleges the Petition’s stated motivation for claim 8’s *weighted function* fails due to “numerous alternatives.” POR 29-30. Not true. PO not only misunderstands the Petition’s arguments, but also ignores that just because “other possible combinations existed does not negate obviousness.” *DexCom v. Abbot*,

¹² As noted above, different components of Wang’s *computational device* (smart appliance) can perform different aspects of the claims.

IPR2022-00605, Paper 29, 57-58 (citing *Merck v. Biocraft*, 874 F.2d 804, 807 (Fed. Cir. 1989)). The Petition—supported by Dr. MacCarley—sufficiently explained why a POSA, given the disclosure in Wang, would have been motivated to implement the limitations of claim 8. Pet. 55-56; Ex-1003, ¶¶145-146.

The third of PO’s arguments (POR 29-30) conflates limitation 1[C] (related to the *automatically reducing* step) with claim 8, yet claim 8 adds steps to limitation 1[B] (the *analyzing* step) not 1[C]. The Petition did properly explain—as to the correct limitations—the motivation to weigh information from various feeds and to do so via a linear combination of values. Pet. 55-56.

PO then repeatedly admits that Wang has “various communication feeds” (POR 35), yet attempts to distinguish Wang’s Figure 17 aggregate feed example (reproduced below, and discussed at Pet. 58-59) by relying on its incorrect construction of *the aggregate feed*. Since that construction fails (Section II.A), its attempt to distinguish Wang’s Figure 17 example fails too.



Claim 8 is obvious.

G. Claim 9 is Obvious

PO focuses its argument on the rate of change component of claim 9, ignoring that the environmental condition data *comprises at least one of: a spot price value of electricity; and a rate of change of a price of electricity*. POR 36-37. PO fails to address the Petition’s reliance on Wang’s teachings that “real time energy tariff data” can be particularly useful for energy curtailment ‘in SPOT energy markets where energy prices continually change.’” Ex-1005, 61:7-9. The Petition’s showings as to claim 9’s recitation of *a spot price of electricity* are un rebutted.

H. The Remaining Claims are Obvious

Because PO submits no standalone arguments for dependent claims 3, 6, 10, 12-14, 16-17, and 19-20, and independent claims 11, 15, and 18, these claims fall alongside the claims discussed above.

V. **GROUND 2: WANG-AESO RENDERS CLAIMS 2, 12-14, AND 20
OBVIOUS**

A. **Claims 2, 12, and 20 are Obvious**

PO's only standalone argument for Ground 2 is that the AESO data "does not provide any disclosure that is related to a small-size fossil fuel plant *coming on-line*." POR 46. PO is wrong. The Petition explained that the TNG data provided for each respective plant would have obviously been used to determine that such a plant is coming on-line to provide power to the grid system, such as "a TNG value for the respective unit **changing from zero to a non-zero value**." Pet. 80-82; Ex-1003, ¶213. And the petition also discusses how the MCR data within the AESO Report could be used to "determine respective capacities for each unit of a particular categorical identifier (e.g., coal-based power generation units)," to determine that a particular unit is a *small sized fossil fuel plant*. Pet. 81.

COAL			
UNIT	MCR	TNG	DCR
▶ Battle River #3	148	0	0
▶ Battle River #4	148	152	0
▶ Battle River #5	368	383	0
▶ Genesee #1	384	382	0
▶ Genesee #2	384	383	0
▶ Genesee #3	450	458	0
▶ H.R. Milner	143	140	0
▶ Keephills #1	381	376	0
▶ Keephills #2	381	353	0
▶ Sheerness #1	378	393	0
▶ Sheerness #2	378	0	0
▶ Sundance #1	280	280	0
▶ Sundance #2	280	272	0
▶ Sundance #3	353	344	0
▶ Sundance #4	353	348	0
▶ Sundance #5	353	343	0
▶ Sundance #6	399	0	0
▶ Wabamun #4	279	210	0

Ex-1006; *see also* Ex-1018 (showing changes in TNG values over time).

B. Claims 13 and 14 are Obvious

The Board preliminarily noted an inadequate explanation as to “how claims 13 and 14 are purportedly analogous to claim 2,” ID 44, but the Petition had rather asserted that “[c]laims [12, 13, and 14] are otherwise analogous to [c]laims 2, 5, and 9, **respectively**, and are **obvious for similar reasons**” and continued to cite those portions of the Wang-based obviousness ground discussing claims 5 and 9 (Pet. 82 (citing Sections 9.5 and 9.9). PO’s expert explained “‘respectively’ usually means you’re referring back to something,” and that in the context of the claims of the ’243 patent, 12 corresponds to 2, ... 13 corresponds to 5, and ... 14 corresponds to 9.” Ex-1025, 320:21-321:6. Claims 13 and 14 thus rely on AESO data for the

obviousness of features recited in the claims from which they depend (claims 11 and 12) and rely on Wang for features that remain in the combined Wang-AESO system, based on teachings that Wang supplies. This sufficiently demonstrates that claims 13 and 14 are obvious in view of Wang-AESO. *Tesla v. Autonomous Devices*, IPR2023-01055, Paper 47, 79 (finding that when a Petitioner has provided “sufficiently specific arguments for a claim in a previous ground,” they need not “repeat its arguments” for the same claim in a later ground).

VI. CONCLUSION

Claims 1-20 are unpatentable and need cancellation.

Dated: February 26, 2025

Respectfully Submitted,

/ Alexander B. Stein /

Alexander B. Stein, Reg. No. 71,397

CERTIFICATION OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This petition includes 5,591 words as counted by Microsoft Word and is therefore in compliance with the 5600-word limit established by 37 C.F.R. § 42.24(c)(1). Accordingly, pursuant to 37 C.F.R. § 42.24(d), lead counsel for Petitioner hereby certifies that this PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE TO PETITION OF U.S. PATENT NO. 8,291,243 complies with the applicable type-volume limits.

Dated: February 26, 2025

Respectfully Submitted,

/ Alexander B. Stein /

Alexander B. Stein, Reg. No. 71,397

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b), I certify that I caused to be served a true and correct copy of the PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE TO PETITION OF U.S. PATENT NO. 8,291,243 and new Exhibits 1025-1027 were sent on the date noted below, via email on Patent Owner's counsel of record in this proceeding.

Devlin Law Firm LLC

Jason Shapiro

jshapiro@devlinlawfirm.com

Michael Siem

m.siem@devlinlawfirm.com

Cedric Tan

ctan@devlinlawfirm.com

Lynn Lehnert

llehnert@devlinlawfirm.com

Nadia Loizides

nlozides@devlinlawfirm.com

Dated: February 26, 2025

Respectfully Submitted,

/ Alexander B. Stein /

Alexander B. Stein, Reg. No. 71,397