

Make it Real Compared to What?

"A leader takes people where they want to go. A great leader takes people where they don't necessarily want to go, but ought to be."

Rosalynn Carter

"Every theory presented as a scientific concept is just that; it's a theory that tries to explain more about the world than previous theories have done. It is open to being challenged and to being proven incorrect."

Marvin Harris



IMPORTANT NOTICE TO WPTF MEMBERS. ACTION REQUIRED: Beginning this October, the Friday Burrito will be accessible to WPTF members by subscription only. The monthly fee will depend on the number of readers and email addresses listed for each respective WPTF member. For information about the monthly fee, please [contact me via email](#). In many cases WPTF members may have a more cost-effective option subscribing to the Friday Burrito through Energy GPS. [Click here to request a quote or more information](#)

My 36-year-old son informed me that my grandfathering status has been moved up three weeks. My daughter-in-law has a delivery complication for which the doctors don't want to take any chances, and they don't want her to go into labor. Thus, a delivery date of September 27 has been scheduled, and so it shall be. I'm prepared. I have nothing really to do with this event, but nonetheless, I am prepared like I was taught in the Boy Scouts. And, yes, I am doing a Burrito the same

week so be ready for the (s)weeping expressions of happiness and all that.

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A few weeks ago, I wrote that Halloween costumes, candy, and decos were on display at the big box stores sooner than ever. Back-to-school stuff has been put in the back stockroom. Even Disneyland is in the act as their nightly float parade at the theme parks is now Mickey's Not-So-Scary Halloween Party, and it started last Friday. I [read](#) in a news article: "Disney is firing the first, extremely early shot in this year's theme-park Halloween arms race. Some events, like Disney's, are more family-oriented. Others at Six Flags and Universal Studios lean into the horror, with actors in gory makeup trolling the grounds. What nearly all of these events of the Halloween

industrial complex have in common is that they are growing—in size, popularity, and most notably, duration. The witching hour has turned into the witching months." The Halloween industrial complex ... well put.

Stuffy Heat Journal

Folks in Portland this week sweltered through record-breaking heat. I understand that the mercury bulb hit 108 degrees. Yeah, that's toasty. Across California, high afternoon temperatures moved in and tested the metal and flexibility of the power grids. I took the opportunity to drive to my home in Tahoe and experience some cooler weather. I wasn't disappointed. Nighttime temps were in the low 50s, and I enjoyed sleeping with the windows open and a blanket atop me.

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The CAISO grid fared well although there were cuts in low-priority exports last Monday, Tuesday, and Wednesday evenings. Exports backed by Resource Adequacy (RA) capacity² that were scheduled in the Integrated Forward Market (either economic bids or self-scheduled, i.e., Day-Ahead Low Priority Price Takers (DALPT)) were escorted out of the ensuing RUC run. My OASIS instructor, Kallie Wells of Gridwell Consulting, actually showed me how to access the Residual Unit Commitment (RUC) export schedule reductions!!! Suddenly, I was king of the world ... until I downloaded each day's data in CSV format and discovered that the values and time stamps were all messed up. I threw away about an hour's worth of work and started on Plan B ... I manually entered in a spreadsheet the RUC schedule reductions for the ties that I thought had the greatest movements. That sort of worked, but not well. Most targets for export reductions didn't follow a nice repeatable pattern.

Western States Playbook

CAISO YTD Renewables Curtailment:

As of 7/31/23: 2,217,933 MWh
As of 7/31/22 2,161,235 MWh

% of solar and wind output curtailed relative potential renewables production:

YTD as of July 2023 5.53%
YTD as of July 2022 5.18%

CAISO EDAM Forum. Aug 30 in Las Vegas. See the [news release](#) here. Features panel discussions that will delve into the potential benefits regarding EDAM participation. To register for the event please [click here](#).

	HE 17	HE 18	HE 19	HE 20	HE 21	HE 22
14-Aug						
Ties						
PV West DALPT			1,650	1,652	255	1,041
15-Aug						
Ties						
Malin 500 DALPT	2,149	2,099	1,630	1,630	1,549	
PV West DALPT	1,420	1,420	1,394	1,296	1,095	1,095
16-Aug						
Ties						
Malin 500 DALPT	1,385	1,385	1,308	1,298	1,335	607
PV West DALPT	1,587	1,588	1,588	1,488	1,388	1,388

Thus, I opted to remove the small and infrequent export cuts (Is a 300 MW schedule reduction for one or two hours small? Probably not, but I removed those too.) because my goal was to stop drowning in data and sip from the cup of knowledge. There were scant few export reductions on Thursday, so I felt the data in the table to the left showed the most significant Day-Ahead RUC intertie schedule cuts for Monday, Tuesday, and Wednesday. It captured what I have been pining to communicate.

I can't opine about how the schedule cuts are selected ... maybe they are just zeroed out, but that topic remains above my pay grade. However, the CAISO operators' load bias causes the adjustments³. Think about it. If the RUC load bias amps up the load forecast, then the CAISO needs more resources to meet demand. That was Take 1. Here's the same idea as Take 2. The addition of the load bias causes the CAISO to require more imports and internal resources to meet load plus exports. The frictionless way to balance, I guess, is to cut low-priority exports backed by RA capacity. If the grid situation becomes more severe, then higher priority exports are cut, and a whole lot of other ugly things happen that no one likes to see.

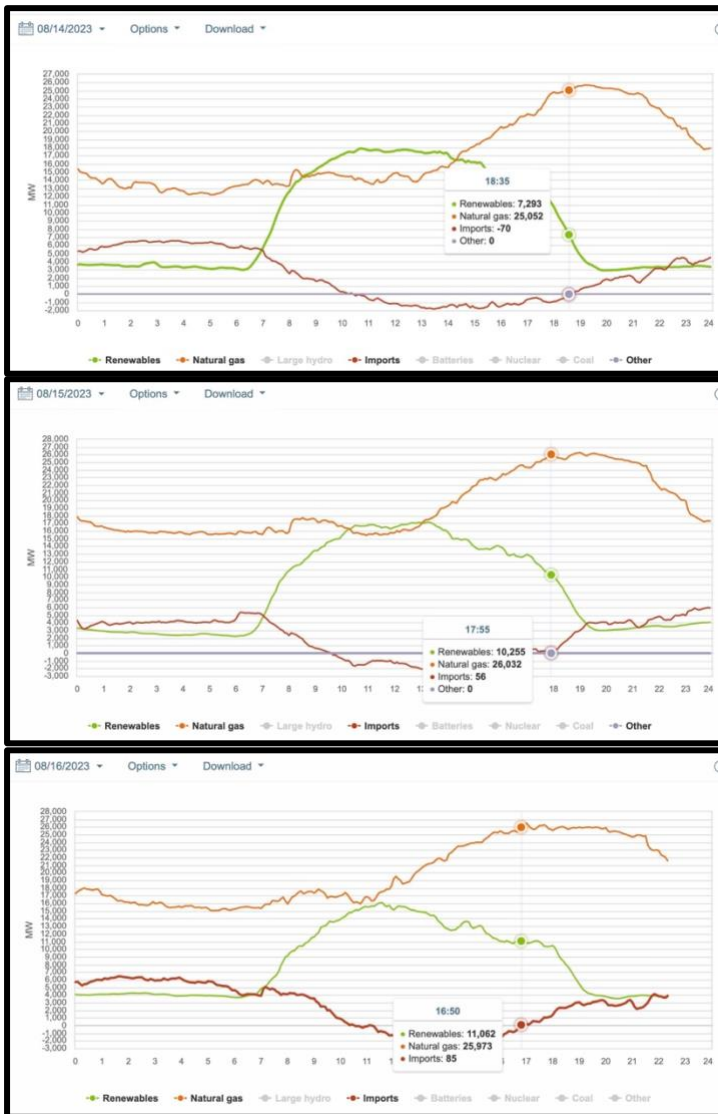
It's instructive to look at the supply for last Monday, Tuesday, and Wednesday from the CAISO's Today's Outlook figures and observe how the dispatch merit order moved with each passing day. On the next page are the 5-minute supply figures for Monday (top), Tuesday (below Monday's), and Wednesday (bottom). Total electricity demand creeps up by about 5%/day. The supply stack does an interesting shift to the left. I show for the daily charts the data legend at the 5-minute span where CAISO imports and exports are roughly equal ... i.e., the net import is close to zero. I pick the imports-equals-exports anchor because I need a locus to make some kind of comparison.

Last Monday, the near-zero net import point occurred at 6:35 p.m., on Tuesday at 5:55 p.m., and Wednesday at 4:40 p.m. The tipping point in net imports moved forward in time by almost two hours from Day 1 to Day 3. Note the swell in gas burn. Truly amazing in that the CAISO loads were high, but not pushing the envelope like they did last September. The gas dispatch was alarmingly close to the fleet capacity. My discussions with other grid nerds launched the possibility that

² I often overlook the importance of exports that are backed by RA resources. These are the resources most valuable to the grid rather than non-RA capacity. Grid sufficiency depends upon securing RA capacity and, therefore, generation used for self-scheduled export sales (DALPT) under a 6x16 standard product are the preferred targets of the RUC decisions.

³ Since last May, the CAISO operators may no longer bias load unless the day's maximum load forecast is above 35,000 MW.

some of the gas fleet, especially the older once-through-cooling legacies were dispatched well before the evening ramp because they have start-up time constraints. In other words, less flexibility in ramping up or down to the preferred operating point.



The battery energy storage systems' (BESS) net discharge was impressive. On Monday (not shown in the plot to the left) it vaulted above 4,200 MW! The following weekdays the maximum discharge didn't get anywhere near that level. Possibly, BESS was dispatched to fulfill ancillary services awards on Monday evening, but not on the other days. In any case, the BESS fleet didn't do much to dampen the gas burn. Can we agree on that?

Now, I want each of you to squint your eyes a bit and gaze upon the charts for the three weekdays. Do you see anything in the near horizon to displace the orange lines (gas burn) at the levels shown? If you do, then shut your eyes completely. It's easier to believe when facts are not faced.

Speaking of BESS and the Gas Burn

This is not an endorsement for Alka-Seltzer.

The good folks at [Energy GPS](#) are always releasing special reports on topics of interest. On August 3, they published for their clients a piece entitled "[HandiCAPPING Battery Capacity in CAISO?](#)" There's no doubt their research is worthy of their excellent reputation. The report investigates the relationship between the CAISO's storage fleet and the impact on natural gas burn (great segue, no?).

The premise of their paper addressed the question: "Will the [CAISO] battery fleet be able to outpace the stretching of the midday to evening ramp growth we are seeing from the net exports mentioned along with all the moving parts tied to similar hours inside of

CAISO?" They mined the available data on the BESS capacity and confirmed that, "After reviewing the data from the first five months of the year, a clear pattern had emerged: projects were continuously being pushed back one or two months each month." I have yet to hear of a California BESS project coming online on time. Delays of two months to 18 months seem to be the norm, and the reasons vary all over the map. In some cases, it's permitting. In other cases, it's interconnection upgrades awaiting completion by the local utility.

Their conclusionary remark is golden IMO: "With ongoing delays shaving down the projected battery fleet capacity in CAISO, it looks like batteries won't be a big enough shovel to make a dent in power burns any time soon. As we move toward the end of 2023, we're expecting around 1.7 GW of more battery capacity to come online. With current combined flows on Mead and Palo taking more than 2 GW from CAISO during the key evening hours, the battery fleet gains are hardly the biggest force on CAISO power burns."

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Global Carbon Emissions Inch Up ... What a Surprise!

Holman Jenkins is a regular Op Ed columnist for the [WSJ](#), and I know my pal Glen Boshart will remind me there are other points of view regarding GHG emissions. Nonetheless, I found [Jenkins' latest column](#) quite illuminating. In short, global CO₂ emissions actually grew [12% faster](#) in 2022 than energy consumption according to research by the strategic data analysis firm EnerData. Per Jenkins, "Needed is a news media able to think and communicate in multi-variable terms rather than single-variable terms (e.g., green energy = good)." Amen. I was recently interviewed by an Australian reporter who covers energy matters. He said that the most virulent response he gets from any of his news articles are ones that question the reality of a carbon-free energy world simply by eliminating all fossil fuels. He said, "It's like a questioning one's faith." Exactly, net zero has replaced organized religion. All it needs is a savior who dies for our sins.

Back to Jenkins, he posits that subsidies for green energy actually stimulate the demand for electrons and hydrocarbons such that energy demand continues to grow and lurch ahead of promised carbon reductions. "In the absence of a carbon tax, green-energy subsidies mainly stimulate more energy consumption overall. In the presence of a carbon tax, they're redundant and make carbon-saving decisions less efficient than they would otherwise be." I love subsidies ... for me ... but not you.

Baguettes with Chef [Laura Manz](#)

"This super-easy baguette recipe was perfect for quickly prepping in little snippets of time between the daily routine. The dough comes together in a matter of minutes before a hand-off 90-minute rise. The cooked loaves make a perfect sandwich baguette for a picnic or favorite adventure. Mix different types of flour and add herbs of your choice to suit your palette."



A Hardy Regional Outlook

[Click here to email Randy Hardy](#)

When Two is Less Than One

CAISO, Southwest Power Pool (SPP) and western Balancing Authorities (BAs) are moving steadily forward to create Day Ahead Markets (DAMs) in the region. While CAISO finalizes its EDAM, SPP's Markets+ is emerging as a viable DAM alternative. Meanwhile WECC utilities/BAs are evaluating which of these DAMs to join given their promise of economic and wind/solar integration benefits similar to, but much larger than, those produced by CAISO's Energy Imbalance Market (EIM).

While ultimate DAM participation decisions are in flux, they could be affected by a recent State public utility commissioner's suggestion to administratively create an "independent" board that contracts with CAISO to operate a WECC-wide DAM. Despite this concept, however, tendencies of WECC entities seem fairly clear: PacifiCorp and many Northwest investor-owned utilities (IOUs) will probably join EDAM, while most Northwest public power entities (including BPA) and Desert Southwest utilities will likely join Markets+. Thus, WECC seems headed for two DAMs and possibly two RTOs.

Creation of two WECC DAMs/RTOs will certainly improve on the status quo. Unfortunately, it also represents a suboptimal solution to adopting a single DAM for all western states. For example, a two-DAM WECC market will be significantly fragmented. How to manage the resultant seams issues will challenge both CAISO and SPP. While ad hoc operational accommodations will occur, both DAMs will sacrifice measurable economic and reliability benefits. I would guess such inefficiencies could reach 20-30 percent of benefits available from a single DAM/RTO. In addition, no clarity yet exists on how this dual DAM system would interface with the Western Resource Adequacy Program (WRAP). With WRAP members in both DAMs, how access to generation/load diversity in different WECC regions (the key to WRAP's success) can be assured is uncertain.

In short, while two DAMs seem inevitable, that result falls well short of optimizing potential benefits available.

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Warm 300 ml of water in the microwave for 30 seconds. Add one package of active dry yeast and ¼ tsp. of sugar to the water and let bloom for five minutes. In a large bowl or stand mixer combine 3 cups of flour (I use 1 cup wheat flour and 2 cups bread flour) and 1 tsp. of salt. Mix with an electric mixer, whisk attachment or dough hook until everything clings together in a sticky ball. Cover the bowl with plastic wrap and let rest for 90 minutes. Add any herbs you'd like (I use 2 tsp. of Herbs de Provence) and transfer the dough to a floured surface. Divide in half and form a loaf out of each piece. Twist each loaf to make a gentle spiral patterned baguette. Transfer to a baking sheet that has been covered with parchment paper. Cook in a 480° oven for 20-25 minutes. Cool for 10 minutes before serving.

Laura, that sounds terrific, but I can't bake anything. It just never works for me, and I get frustrated. But reading your recipe brings to mind the aroma of fresh baked baguettes. Nice dish if you aren't afraid of ruining a slab of dough.

Things in the People's Republic of California

Can You Say Export Scheduling Priority?

If there is one topic that constantly confuses me, then it is the CAISO priority for ranking power exports. I have referred to it several times in this week's edition as if I am an expert and can rattle off the priorities like conjugating subjunctive Spanish verbs. Truth is, I can't do either very well. There's too much to remember. Therefore, I was pleased when [the CAISO released this week a 4-page tutorial on the subject](#). I shall review it herein, and you shall commit it to memory. Or at least a bookmark.

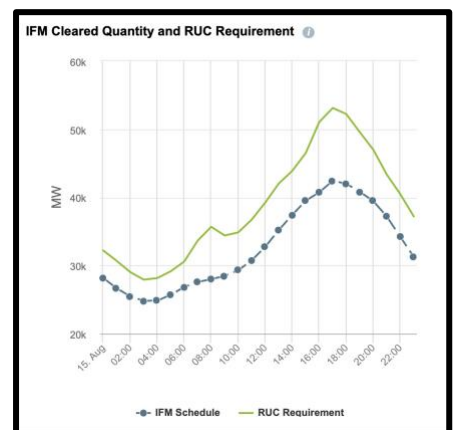
The CAISO document explains that to manage the grid during tight conditions, as we are experiencing presently, the operator determines, "The amount and sequence of exports the market must reduce in the day-ahead and real-time markets ... to balance supply and demand." Bully. How many flavors of power exports are there? Sorry you asked.

There are many. Shall I count the ways? Of course. There are five, and they are defined in a language that is spoken by only a few stalwart grid nerds. Here they are from lowest to highest primacy:

- **Economical:** The export schedule is submitted with a quantity and price just like you'd expect. If the price clears, then it is scheduled. This category is the only easy one to understand.
- **Low-Priority:** There are two flavors of low priority exports: one in the Day-Ahead and two in Real Time, thus making the distinction garbled. Clear as mud. In both the DA and real-time space there are low-priority exports that are submitted with a quantity and no price. The product is a price taker and that is why the acronym DALPT is used to describe a **Day Ahead Low Priority Price Taker**. Simple. Right?
- **Low-Priority Real Time:** It looks like DALPT, but it's called RTLPT because the product is only scheduled in real time, like at the last minute, sort of. RTLPT has lower priority than any DALPT that made it

What we believe...

1. Competition yields lower electricity rates.
2. Stable and transparent rules and regulations promote private investment.
3. Private investors, rather than utilities, will spend money on new power plants and transmission facilities if they can earn a return that is balanced with the risks.
4. Private sector investment results in lower average prices without risking consumers' money.
5. However, when IOUs do the investing, the risks to them are minimal or non-existent because ratepayers cover all the costs.
- 6) Overcapacity lowers electricity spot market prices; yet retail rates can increase in this case due to full cost-of-service regulation.
- 7) Markets work best when there are many buyers and sellers.
- 8) At-risk money will be put to investment where markets exist that are well regulated and yield credible prices.



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through the RUC meat-grinder process after the operators throw in their load forecast bias, which is only transparent one day prior. Remember, the bias is applied when the maximum Day-Ahead load forecast is greater than 35,000 MW. Got it? Well, I thought I did, but then I looked at the [CAISO Day Ahead Market Watch and Summer Reports](#) and I was a bit shocked to see that every hour contained a load adjustment on a day when the maximum load forecast exceeded the threshold. Stupidly, I thought the adjustments only occurred for hours that exceeded 35,000 MW. Not. Check out the figure on the page above. Here is what the CAISO wrote in its document: "The lowest priority is assigned to price takers participating only in the real-time market (R2). A slightly higher priority is given to price takers or economical exports already cleared in the day-ahead market who roll their RUC schedules into the real-time market (R3). For any self-schedules above RUC schedules, the market assigns a lower priority (R2)." I have no idea what they meant.

- **High-Priority:** It's covered in the Book of Deuteronomy, and I expand upon it below. Many things to consider in this lot including wheel-through transactions that inflame the likes of Desert Southwest balancing authorities who believe their power that is sourced in the Pacific Northwest, flows through the CAISO, and is untouchably holy.
- **Existing Transmission Rights:** These are legacy rights that have been around forever, and I recall during the CAISO startup phase back in the day that handling these beasts was the topic of many heated discussions. Still is, I suppose.

#	Type	Requirement	Label/Identifier
D1	Economical	Bid with a specified price and quantity	ECON
D2	Low priority	Bid with quantity only -no price-	DALPT
D3	High priority	Bid with quantity only -no price- identifying a non-RA supporting resource or a resource on a RA plan to serve external load.	DAPT
		For Exports of a wheel, transaction approved and registered 45 days in advance.	
D4	ETC/TOR	Bid with quantity -no price- under registered legacy contract or transmission ownership rights	ETC/TOR

#	Type	Requirement	Label
R1	Economical	Bid with a specified price and quantity	ECON
R2	Low priority	Bid with quantity only -no price-	RTLPT
R3	Low priority	Bid with MW quantity only -no price- up to cleared MW in RUC	DALPT
		Bid with quantity only -no price- identifying a non-RA supporting resource or a resource on a RA plan to serve external load.	
R4	High priority	For Exports of a wheel, transaction approved and registered 45 days in advance.	DAPT/RTPT
		Selection of self schedule type SS in the bid to have high priority.	
R5	ETC/TOR	Bid MW quantity -no price- under registered legacy contract or transmission ownership rights	ETC/TOR

The only toe stubs in the list are the high priority exports with the acronym DAPT or RTPT. As you can read in the tables above, there are three subsets of this category. Let's explore:

- The first subcategory is for exports backed by non-RA resources. I [wrote about that above](#), so I won't go into it again. The CAISO adds one element more by identifying RA resources serving external load. I'm not certain to what that refers.
- The second subcategory is for wheel throughs that have been pre-approved 45 days in advance.
- The third subcategory is for self-scheduled exports with an SS designation. I shudder at that term, SS. You feel me?

Given the product definitions and their respective priorities, the CAISO explains how it balances the grid, considers congestion, and treats the touchy subject of wheel-through transactions. Onward.

The respective products clear as follows: "The clearing process begins by **not** (my emphasis) clearing economical bids, then reduces low-priority exports, and then potentially high-priority exports. Strict adherence to scheduling priorities, from lowest to highest, occurs only in power balance conditions when supply cannot meet all demand and exports." I read that to mean that economic exports are dumped first, and then it moves on to low-priority self-scheduled exports, and if needed the higher priority stuff. Keep in mind, this is after the CAISO operators add their load bias, so what the CAISO is calling demand is adjusted demand to account for uncertainty and a basic mistrust of the market bids. Sorry, but that's the way I read it.

But wait. There is more. The CAISO explains, "When the optimal solution [using LMPs] requires reducing only a portion of a group of exports, the clearing process will take into account the locations of these exports (scheduling points) to

differentiate which reductions produce the least-cost solution. In the absence of congestion, marginal losses—which are location specific—will be the main factor in determining which exports are reduced first among those of the same priority.” That passage does make sense. A lot of sense. Thanks for including it because it helps to understand the labyrinth.

As for grid congestion, it isn't surprising that it introduces another wrinkle to the process. It's a bit confusing, but the logic stands. The words to describe the CAISO logic, however, are difficult to follow. You tell me: *“It is conceivable that low priority exports could be curtailed prior to utilizing all economical bids or that certain high priority exports might be reduced ahead of low priority ones due to congestion. Conversely, certain low-priority—or even economical—exports could receive full awards while other exports of higher priority are reduced.”* Okay. I think I get it. I'll trust someone else to connect the dots and make it happen. That's why we have consultants and attorneys.

Finally, if the wheel-through high-priority exports need to be trimmed, then the CAISO advises, *“CAISO incorporates specific functionality to proportionally allocate restricted intertie capacity in situations where both the intertie capacity is limited and while the CAISO has a supply infeasibility.”* That's a fair allocation process considering all the above. I dig. The only words missing are those related to the load bias. Everything is post-load biasing. It's meant to cover uncertainty and market credibility (or lack thereof), and I won't quibble. The scheduling priorities for exports seem reasonable, even if I only understand about two-thirds of it.

Grand Phunk Salsa a la EnergyGPS

Questions Asked and Questions Answered

Washington State carbon policy continues to be the shiny object that is hard to look away from. It continues to befuddle, entertain, bemuse, and confuse. With this week's hot weather in the Pacific Northwest there were a lot of people looking to export energy from the CAISO during the evening ramp hours to deliver to the Mid-C.

Imagine inbound questions and answers like the following about the treatment of exports from the CAISO sinking at Mid C.. It's a fictitious conversation but not too far from what we often encounter:

- **Client:** If I deliver energy to the Mid-C with CAISO as the source and BPA as the sink do I have a State of Washington carbon obligation?
- **Energy GPS (EGPS):** Of course not ... BPA is not subject to Washington carbon rules. Think of BPA as the 51st state. So, if you deliver to BPA at the Mid-C with a CAISO source, it counts as a wheel through (import and export) and therefore is not covered.
- **Client:** If I generate from a gas plant in Washington and deliver energy to BPA at the Mid-C do I have a compliance obligation?
- **EGPS:** Of course you do ... because the generator is located in the state of Washington it will have a compliance obligation.
- **Client:** If I generate from a gas plant across the Columbia River in Oregon and deliver energy to BPA at the Mid-C do I have a compliance obligation?
- **EGPS:** Of course not ... BPA is not subject to Washington carbon rules ... I thought I already explained that.
- **Client:** If I buy energy delivered to Mid-C via the ICE market from ACME Power Marketing and the source of that energy turns out to be BPA, is there a compliance obligation and who has it?
- **EGPS:** Yes, there is a compliance obligation. The emission rate for the near-carbon-free energy from BPA purchased via the ICE market will be the default emission rate (0.4 tons per MWh). The first entity showing up downstream from BPA in the physical path will have the compliance obligation.
- **Client:** So, out-of-state natural gas MWh delivered to BPA is considered carbon free, while carbon-free energy from BPA's dams is deemed to have the carbon emissions of a natural gas plant!
- **EGPS:** Bingo!

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There was some interesting Washington carbon news this week. Because prices in the June auction allowances cleared so high, the Department of Ecology released additional allowances from the Allowance Price Containment Reserve (APCR). These are allowances that are set aside to mitigate high prices. Participation in the APCR auction is limited to entities with compliance obligations. No speculators allowed. The auction was held last week, and results were announced on Wednesday.

As we've written about before, EnergyGPS' analysis indicates the Washington program will be short through the end of the first compliance period – which ends in 2026. The APCR allowances can be used for any vintage year – they are like a wild card. The Department of Ecology sold all available Tier 1 allowances at the stipulated price of \$51.90 and all available Tier 2 at the stipulated price of \$66.68. Demand for Tier 1 was 12x the available supply while demand for Tier 2 was 3x the available supply. The bilateral market has been trading between \$65 and \$70 so these results are not surprising. At least the results of this auction were rational. We are still trying to figure out why the Vintage 2026 allowances sold in the June auction for only \$31.12!

The above Op Ed is from the team at EnergyGPS with Tim Belden as the lead writer:

Shout Outs and Murmurs (🗣️ & 🗨️)

This shout out is from WPTF Executive Director, Scott Miller, who ran last Friday's DC Roundtable. He wrote: *"I first wish to recognize the invaluable contributions to the Roundtable by our esteemed panelists: Carrie Bentley, Chair of WPTF's CAISO Committee, Anna McKenna from the CAISO, and Rebecca Sexton from the Western Power Pool. They teed up the RA topic in both California and the new Western Resource Adequacy Program (WRAP) as well as the future 'fungibility' between the two. David Rubin's presentation was a tour d'horizon on the many regional meetings to help form both EDAM and SPP's Markets+. Carrie Simpson from SPP and Becky Robinson from the CAISO were terrific in explaining the basics of the unique 'day-ahead' markets. Finally, Ian White from Shell and Pam Sporborg from Portland General really put things in a practical framework.*

"We had good attendance from FERC staff, WPTF members who traveled some distance to join us, and a few non-members such as David Rubin from NV Energy. The great thing about the DC Roundtables is that informed conversation can happen between knowledgeable market participants that isn't 'advocacy' or trying to push an agenda, but instead offer a frank exchange of information. As Carrie Simpson of SPP said (who was great in helping to describe the different uses of transmission in a day-ahead market vs. OATT or RTO); 'It was enjoyable to have a conversation about complex subjects with other energy nerds.' I guess that's what we were in that meeting as the sentiment was echoed by the FERC staff that attended the meeting.

"One California member was very appreciative of the broader Western discussion as he had spent most of his time 'inside the CPUC world' and it was necessary to see the broader perspective. All in all, the discussion on Resource Adequacy and how to make the California system jive with the new, more straightforward process of the WRAP combined with excellent discussion on transmission in either CAISO's EDAM or SPP's Markets+ help bring the regional picture into focus. As was noted by FERC staff, a lot is happening in the West, and the feeling was one of cautious optimism."

Thank you, Scott, for continuing the long tradition of the DC Roundtable.

The next letter is from a long-time fellow traveler, Kolby Kettler: *"In the last Burrito, you posed a question whether a revised or shortened standard tradable product might be needed to enhance the CAISO's reliability during the net-peak hours? I believe that your idea is very legit; however, I would not limit the product either to summer months, physical day-ahead, or forward bilateral trading. Consider all of the products that shape our markets and allow for prudent risk management, especially as we move into a deeper, more saturated solar environment.*

"Let me be the Devil's advocate. If market participants agree that a new standard is needed, then are there proper price signals from the CAISO to incent changes in power flows such that CAISO net imports (i.e., imports less exports) are lower? A new standard product on its own without other changes will not be enough.

"One point you made was that traders are creatures of habit. This is very true. However, there is a necessity to conform to a changing generation mix in the Western Grid, especially regarding the CAISO. I also believe there is a level of sophistication in trading shops that allows people to imbed premiums in the shaped or non-standard products that trade bilaterally.

... and, what we should do:

1. Believe in ourselves.
2. Encourage creation of independent, multi-state regional transmission organizations that coordinate policies with respective state utility commissions.
3. Support rules for resource adequacy that applies uniformly among all load-serving entities.
4. Enforce competitive solicitations by utilities for purchasing either thermal or renewable power.
5. Support choice among retail electricity customers.
6. Lobby for core/non-core split of retail customers.
7. Advocate against policies that limit, through bid mitigation, merchant returns on investment that are utility-like returns.

"Back to the CAISO's management of the evening ramp as solar output declines; I'm unsure if the CAISO employs a non-economic market mechanism when the net interchange for any particular 15-minute span exceeds internal ramping capacity. If so, then great, keep it going, but if not, then the CAISO should review and determine if a legitimate (non-)market mechanism could help with the coincidence of solar decline and scheduled exports.

"The CAISO is running a successful Western Energy Imbalance Market (WEIM) and looking to integrate a robust Expanded Day-Ahead Market (EDAM). I would suggest that the CAISO should add to their portfolio the in-house modeling of prices, both day-ahead and real-time, for its neighboring balancing authorities (BA). With the implementation of WEIM and EDAM, this step should be logical and fairly straight forward. As is done in PJM, the prices would NOT be used for settlement purposes.

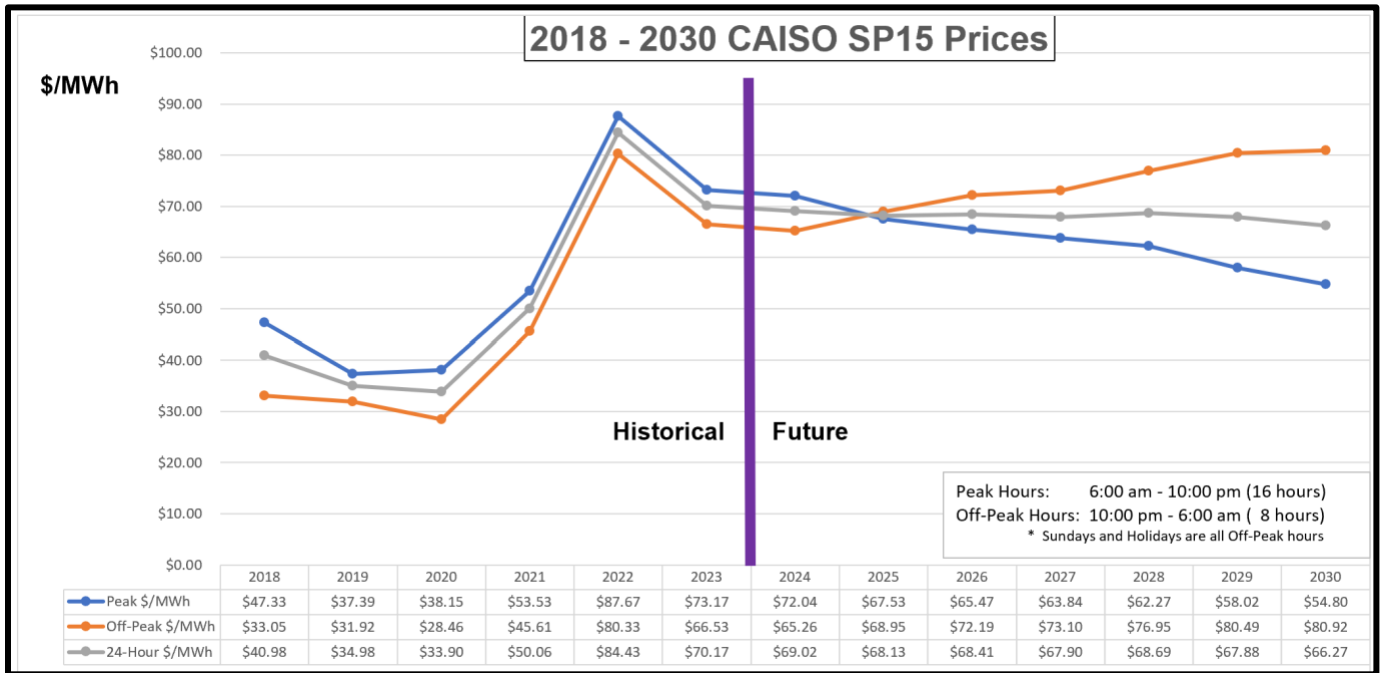
"Why is this important? Well, mainly for price transparency and the potential for a tradable index of prices thereby driving efficiency between the western balancing authorities. I think we would agree – simple price transparency encourages broader market participation and proper behavior. This would provide the market with stable pricing

signals to encourage market participants to dynamically manage their positions and benefit the CAISO's grid management efforts.

"Finally, you and I have discussed the possibility of the CAISO using dynamic transmission access (TAC) fees applied to load and exports that could be higher during the hours of HE19 to HE22 when the CAISO net load is forecasted to exceed a well-defined threshold such as 42,000 MW, for example. The TAC for all users would be subject to a true-up so that total TAC revenue covered costs. However, I do not like this idea because it does not address the underlying issue of supply and demand. Yes, I know that state and federal policies have shifted this commodity market away from economics 101, but our effort should be to best align market signals with behavior. For example, if the basis differential between Mid-C and CAISO import/export is \$20 (Mid-C over) and the export costs are \$15, then the market should move the power to Mid-C. If the CAISO dynamically changes the transmission fee to discourage exports, then one might question if the application of such would be deemed just and reasonable, and is this a short-term solution to discourage physical movement of power? I believe it is. But it is not a solution for rate payers in the long run – absolutely not."

Great letter, Kolby. Thanks for taking the time to write it. I hope others will comment in future Burritos.

Last letter is from Bob Hoffman on the same topic: "I'm not surprised that Energy Traders would respond that they are OK with leaving things the way they are. Why mess up something that works for them. But the reality is that things have changed and there are good reasons to make some adjustments. The mid-day tranche in CAISO energy prices driven by the onslaught of renewable energy has caused a fundamental shift on Peak and Off-Peak forward prices. The off-peak prices exceed on-peak after 2025, with peak prices trending down and off-peak prices trending up. See below on the next page the CAISO SP15 annualized forward pricing below from ICE Exchange dated August 11, 2023.



The struggle is that the high and low pricing points within each day occur during what is now the 6 x 16 peak period. The traditional notion of peak and off-peak pricing has gone the way of aerial TV antennas (or for Millennials, cable TV).

Perhaps we need three colors for the trading day: Green for the middle of the day (HE 9 – HE16), Yellow for the middle of the night (HE 23 – 24, and HE 1 – 8) and red for the evening (HE 17 – 22). The traditional 6 x 16 peak as a single price masks the large swing differential within. It makes the off-peak look higher than peak, when in reality the 'Super Peak' is offsetting the super low mid-day prices. And it's more than a summer phenomenon. In fact, prices during the winter and spring intra-peak period are even more exacerbated. I'm not sure we need to treat Sundays and Holidays as off-peak products anymore.

Odds & Ends (!)

The WPTF Summer 2023 General Meeting is scheduled for August 24 – 25 at the Resort at Coeur d' Alene, Idaho. The hotel is fully booked. No additional rooms are available at the Resort. It is recommended that you try the Coeur d'Alene Inn Best Western Plus, which is about 3.5 miles north, the Hampton Inn, or Marriott Springhill Suites.

All events are at The Resort at Coeur d'Alene. If you are a guest at the hotel, please visit its website for the link to make a reservation on the hotel shuttle from the Spokane airport. Advanced reservations are required.

Attire for the meeting is resort casual, but please make sure you bring a jacket or sweater to the meeting rooms as they are air-conditioned.

If you need to reach the event coordinators, Frank or Jenifer , their mobile numbers are Jenifer: 916-531-4446, Frank: 916-208-8809

On Thursday the Lake Coeur d'Alene Boat Cruise will be hosted by the WPTF Consultants. Those who have signed up for the boat ride should be at the marina check-in area at the Resort at Coeur d'Alene before 12:30 p.m. Jenifer McDonald will be at the marina and will have the tickets for you. The boat tour and beverages onboard are hosted by our consultants. We will return to the marina at approximately 2:00 p.m.

AGENDA

Thursday, August 24

9:00 AM: Golf Outing at the Resort @ \$240/person
6:00 PM: Reception, Dinner: Keynote Speaker Pat Wood, CEO Hunt Energy Network
Presentation of the Kent Wheatland Award

Friday, August 25

7:30 AM: Breakfast
8:30 AM to Noon: Keynote speakers: Gillian Clegg, VP, Energy Policy & Procurement, PG&E, and William Walsh, VP, Energy Procurement & Management, SCE.
Consultant Presentations
12 Noon: Lunch and Adjourn



The Resort is 35-40 minutes from the Spokane International Airport (GEG), and 10 minutes from the Coeur d'Alene Airport (private & chartered flights) and offers scheduled transportation in their limo vans for \$69 per person round-trip from Spokane and \$50 per person round-trip from Coeur d'Alene. You can make those shuttle reservations at the time you book your hotel room.

If you haven't registered for the WPTF meeting, you can do so by [clicking here](#).

For you folks who get the meat-filled version of the Burrito, below are your stories:

