Public Utility District No. 1 of Klickitat County
Board of Commissioners' Meeting
Tuesday, November 9, 2021

A G E N D A

ONE TIME USE – ***Regular Meeting*** Call in number option: 844-621-3956 (Access Code: 2484 482 3040)

Meetings are now open to the public, attendees will adhere to the published state COVID-19 related guidelines.

We are continuing the use of the public teleconference line in recognition of the extension of the state of emergency's statutory waivers and suspensions pursuant to RCW 43.06.210, until terminated or rescinded, whichever occurs first.

KPUD Commission Meeting Start Time – 2:00 p.m. as Advertised;

Location: 1313 S. Columbus Ave. - Goldendale, WA

- **PLEDGE OF ALLEGIANCE**
- Approval of Minutes - 10/26/2021 Meeting
- Approval of Claims/Vouchers for period ending 11/09/2021 *(Isabelle Carroll)*
- Approval of Payroll for period ending 10/24/2021 *(Isabelle Carroll)*
- **PUBLIC COMMENT PERIOD**

REPORTS – 10 min. each:

- Renewable Energy Assets Manager October update *(Kevin Ricks)*
- Power and Finance October update *(Mike DeMott)*
- Customer Service update *(Brandy Myers)*
- Clean Energy Transformation Act Discussion and Public Comment- *(Anita Clever)*
- Commissioners' Reports
- Assistant General Manager *(Gwyn Miller)*
- Manager's Bi-Monthly Report *(Jim Smith)*
  -(see attached report)

GUESTS:

- Nicole Neff-Loci Controls
- Peter Quigley-Loci Controls

AGENDA ITEMS – *(see Manager's Report for further details)*

A. Call for Bid RNG New Blower Equipment-General Construction Bid 2021 *(Kevin Ricks)*

B. Loci Controls Presentation *(Kevin Ricks)*

C. 2022 Klickitat PUD Operating Budget Draft- First Review *(Brandy Myers/Cynthia Bruce)*

ADJOURNMENT

FOR THE GOOD OF THE ORDER:

- WPUDA Association Meeting Nov. 17-19 via teleconference

Note: Agenda is subject to last-minute revisions which may include the Board calling for an executive session.

Public Utility District No. 1 of Klickitat County

80 Years of Service * 1938-2018

GENERAL MANAGER'S REPORT TO THE BOARD

For the November 9, 2021 Meeting

AGENDA ITEMS:

A. Call for Bid RNG New Blower Equipment - Kevin Ricks is seeking approval to issue a call for bid for the RNG Blower project. A history of this request is provided within the packet.

B. LOCI Controls Presentation - Nicole Neff and Peter Quigley will be on site to provide you with a presentation of the well control project at Renewable Natural Gas (RNG). A project update is provided in the Renewable Energy Asset report.

C. 2022 Klickitat PUD Operating Budget Draft- First Review - Brandy Myers, Cynthia Bruce, and Mike DeMott will review where we are to date with the 2022 Budget, receive your feedback and provide answers to questions that may arise. The second review will be scheduled for November 23.

NON-AGENDA ITEMS:

1. Snowden Community Broadband Response - On November 3, I spoke with Roger Gadway from the community and discussed back ground information obtained from Carrie Pipinich from Mid-Columbia Economic Development District and Aaron Estey, White Salmon staking engineer who previously worked for Century Link. I will fill you in at the meeting. MCEDD has already worked with Snowden for years and Carrie is scheduled to talk with their group at their next meeting in December. I do not think I added to what they already know.

   Carrie will be sending us ideas of how we may be able to facilitate or help broadband in the area given we are not contemplating providing broadband services to the home. I expect that email after Thanksgiving.

2. Public Hearings December 14 - We need to discuss times to hold two separate public hearings in December. One would be for the adoption of the 2022 Operating budget, the other is for the Clean Energy Implementation Plan adoption submission. Tentatively, we are thinking December 14th.

3. Energy Northwest Pubic Power Forum - I participated in a panel discussion at the conference on the "utility workforce pipeline" and initiatives and ideas to increase the

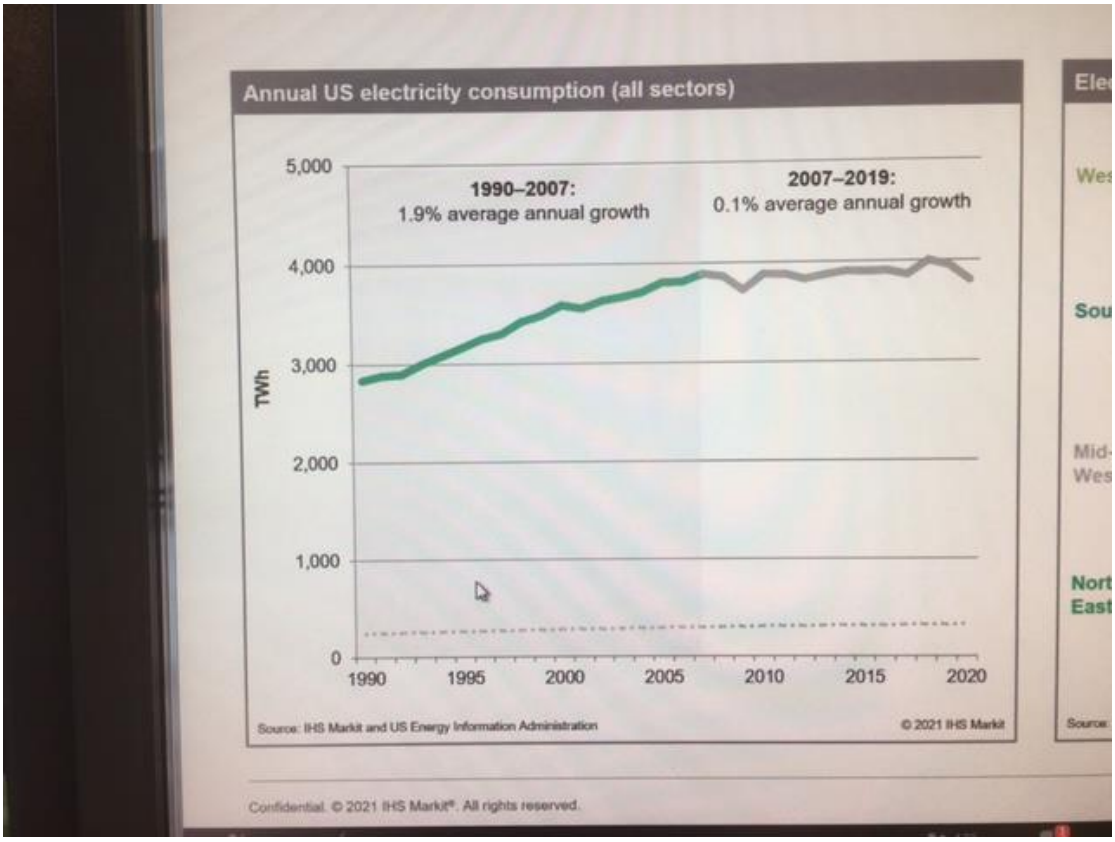
talent pool in the future. We all understand the coming challenges in finding qualified employees. As a panel discussion, it was very successful in creating discussion at the conference. I also believe after side discussions, that Energy Northwest will consider adding a larger training role in the future, hopefully in concert with NWPPA, that adds to their engineering intern program they launched this past year. The idea is "pooled" training programs that starts to address how we transition non-utility people to our business to increase the available labor pool. That would apply to training local talent.

4. Pumped Storage - I will provide an update at the meeting.

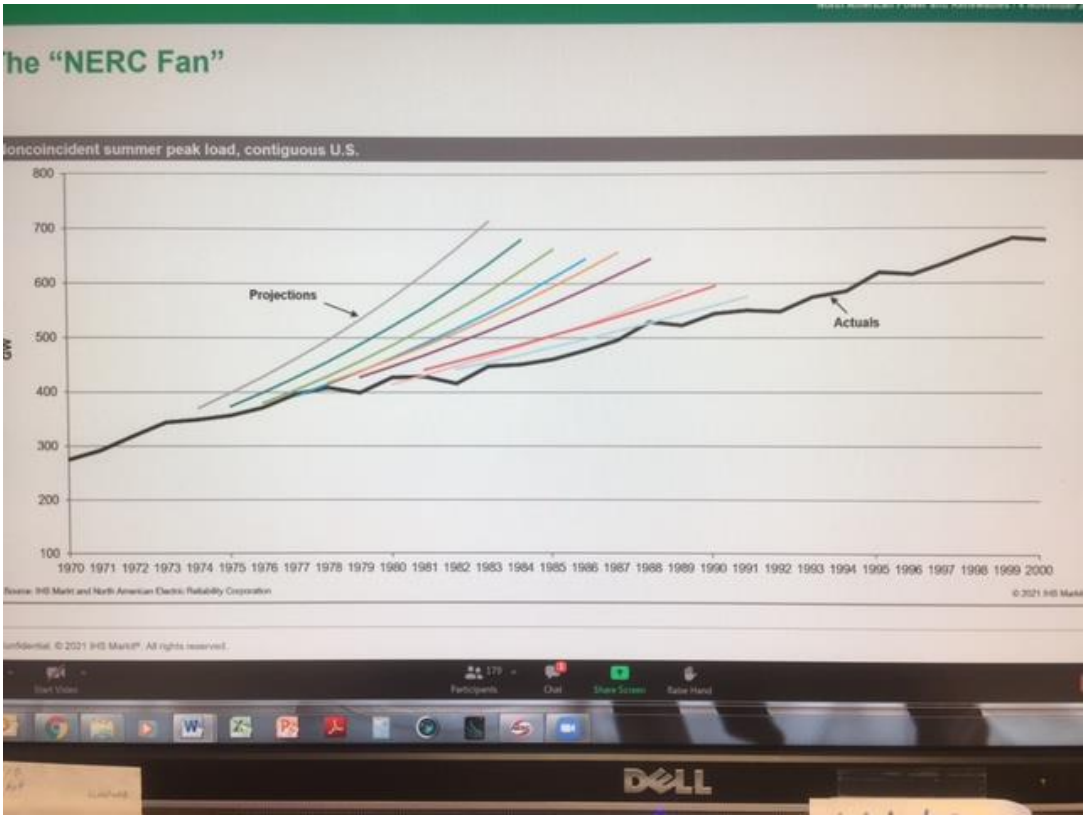
5. PPC Annual Meeting, National Electric Markets - there was an interesting presentation by a consulting firm, IHS Markit, regarding electrical consumption, electrical load forecasting, and the impacts of carbon reduction legislation and renewable energy on load growth. I did not see anything fundamentally different than what we have discussed in the past, but it is interesting to see data on a national level and see the trends at a high level.

   My take away is that electric consumption at the national level has plateaued since about 2007. Despite this, forecasts during this time continued to show future growth. They referenced an inflection point in the industry and many of those load forecasts are starting to show this slowing trend in electricity growth. Now, along comes decarbonization and the electrification of other sectors in our economy.

   So, I am attaching for your reference relevant charts from the presentation for background to think about. Is there anything for us to take away that might affect how we position ourselves?

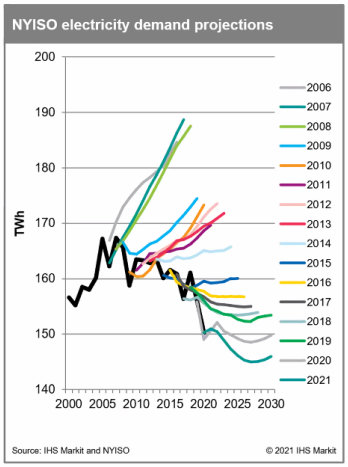


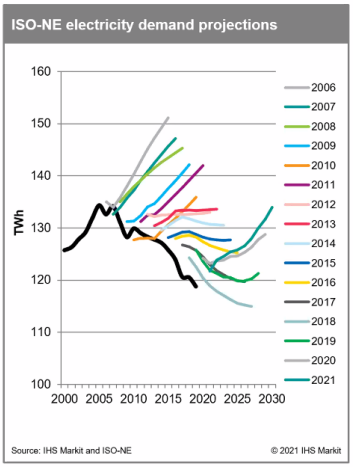
This shows ENERGY consumption through 2020 that shows the slowing growth trend.

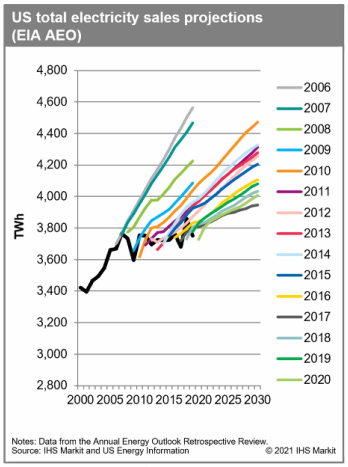


This chart shows the actual DEMAND curve in that same time period and also shows the projected demand. Each line is the projection for that year and shows how the projections were flattening out.

Are industry load forecasts approaching an inflection point?



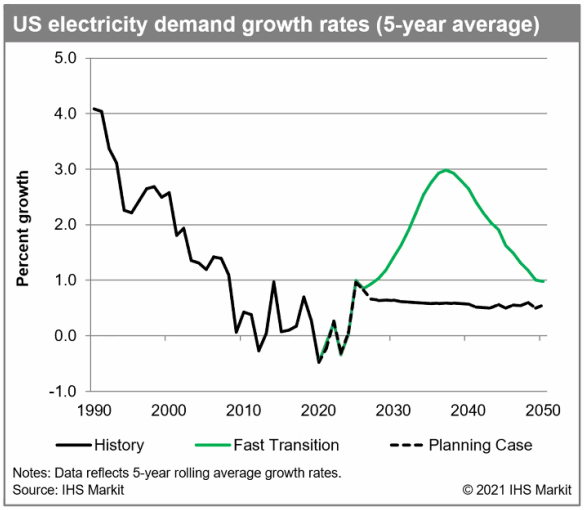


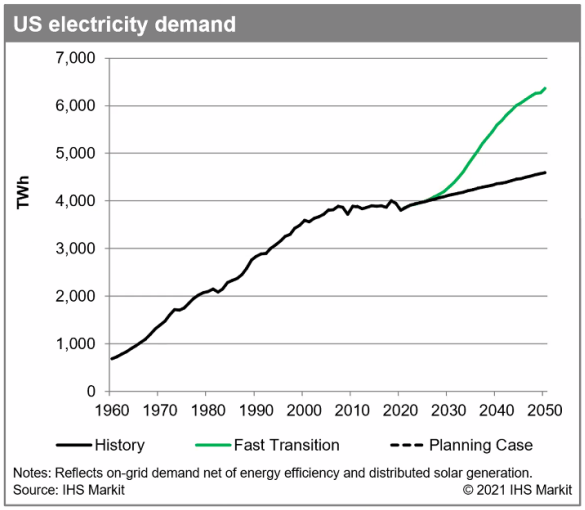


Since 2000, here are ENERGY consumption forecasts for a couple of regions and the US. The middle slide for the North East shows a flattening in 2010 time range and then an increase again

with the potential for electrification being brought in 2018. NYISO does not show this same trend.

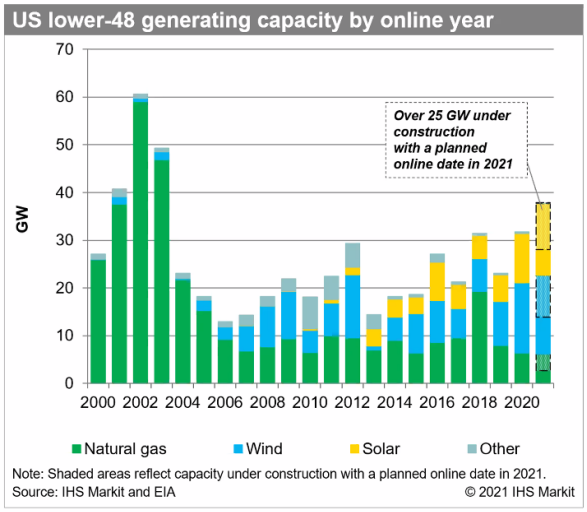
Power demand growth could surge in the 2030s as electrification expands

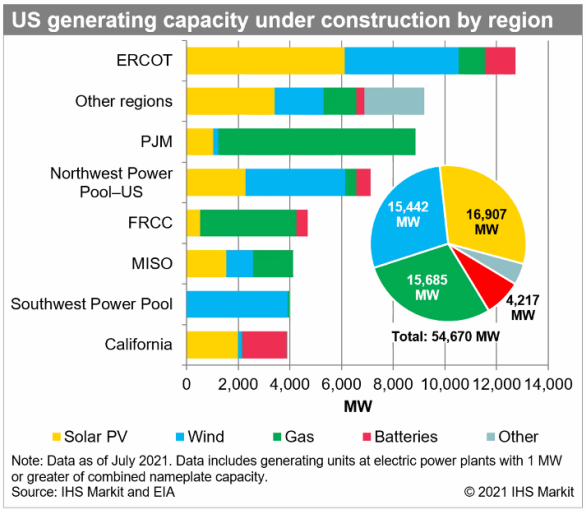




For the chart on the right, 2050 DEMAND is 40% higher than 2030.

Over 35 GW of wind, solar and batteries scheduled to be completed in 2021

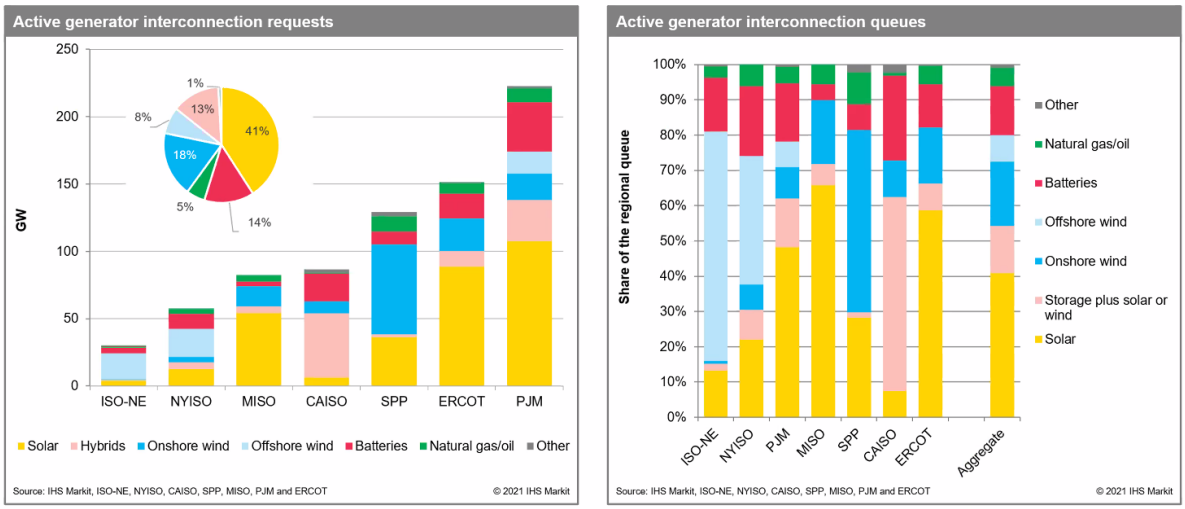




Note: MISO = Midwestern Independent System Operator; PJM = PJM Interconnection ERCOT = Electric Reliability Council of Texas; FRCC = Florida Reliability Coordinating Council.

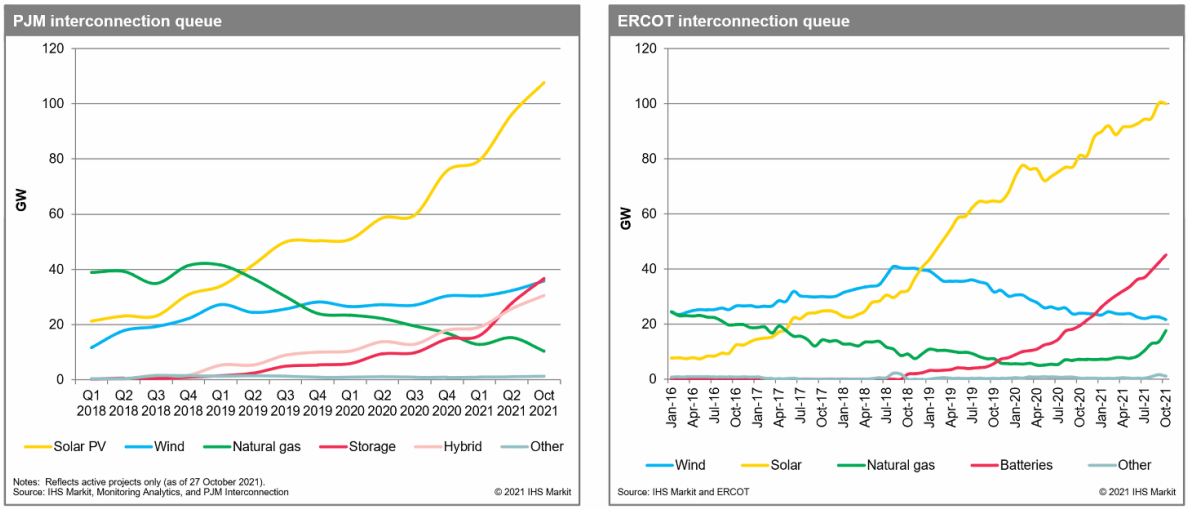
Both these charts are showing additional name plate generation output added annually at the National level. It is interesting to note that this chart is titled CAPACITY and solar and wind is shown. This is not really added capacity. The chart on the right are resources under construction. Again, this is nationally and I would use the term "nameplate output" rather than "capacity". For reference, the national demand for summer peak is estimated at 1,000 GW. Previous charts show a summer peak of 700 GW in 2000.

Wind, solar and batteries account for over 90% projects in ISO/RTO interconnection queues (by MW)



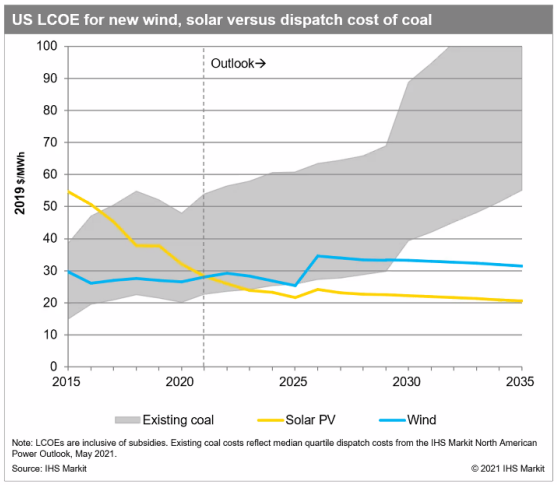
This chart is nationally as well. An interesting data point was provided: New Jersey currently has a peak demand of 15GW and off shore wind development is forecast to be 7.5 GW.

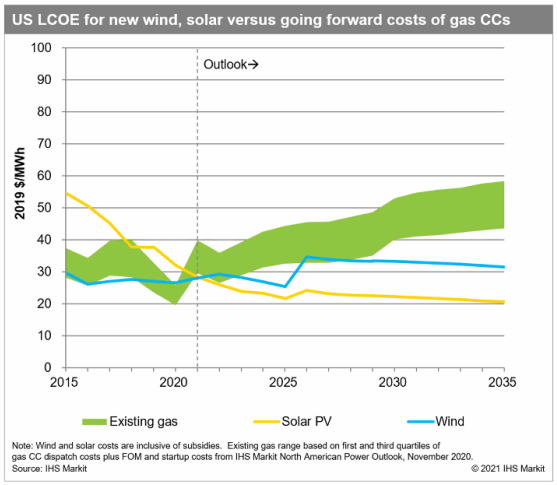
Solar and storage have surged ahead in RTO/ISO interconnection queues



Self explanatory.

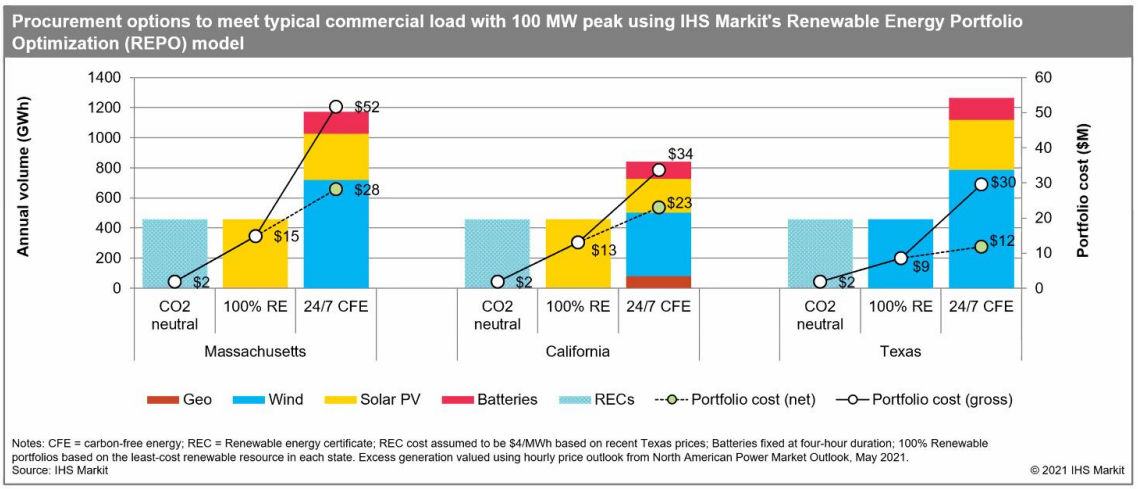
New wind and solar PV are increasingly competitive with the going forward costs of existing coal and natural gas-fired power plants





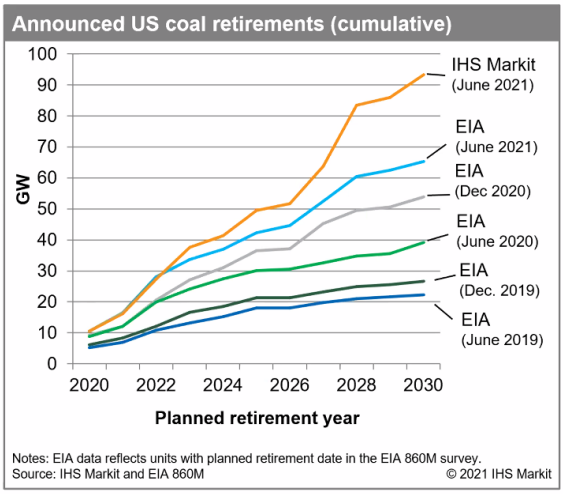
Energy basis. What again was interesting, is that even though everyone knows this chart is ENERGY, not capacity and therefore cannot be used to compare coal and natural gas to wind and solar, the chart is still used as a comparison. As an industry, we are kind of being our own worst enemy.

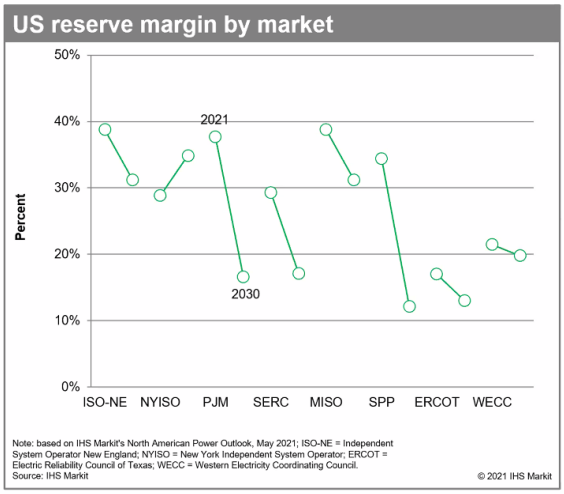
The latest trend in corporate procurement—portfolios of 24/7 carbon-free resources—drive higher-impact investment through resource diversity



Some companies are starting to recognize that buying RECs does not lead to 100% clean every hour. This is a model built by Markit, not by purchasers. This is showing capital cost of new generation, not cost per MWh. It shows what the PGP / E3 studies showed. Significant and inefficient overbuilding of renewable generation is required and it still doesn't mean capacity will in fact cover the load for all hours. This would suggest that the increase to go from carbon neutral on average, to carbon free for each hour increases the capital investment costs by 26 times. $52M versus $2M. Crazy.

Most markets will tighten this decade as coal retirements mount





Reserve requirements are 15 - 20 %, varies by market. As can be seen on the chart on the right, WECC is already tight. ERCOT is Texas and is tight as well. Largest drops in reserves are in coal areas as it is taken off line. If reserve margins are reduced, the risk of insufficient capacity increases.

Final thoughts:

Markit estimates that nationally, the transmission system will need to grow by 50% AND that much of the current infrastructure is aging and will need replacement given current targets. The cost is huge, but that they believe that an even greater challenge will be routing. As these lines will go THROUGH areas, like wind from Montana having to be routed through Idaho and eastern Washington to western Washington, there is no upside for those regions impacted by these new lines and they will be contested. Many proposed lines are already getting rejected in the Northeast.