Below is the text version of the August 24, 2021, National Hydropower Day Virtual Q&A Session.

CAMERON SCHILLING:Welcome to you all, and happy National Hydropower Day. My name is Cameron Schilling, I am Vice President of Marketing Strategy and Regulatory Affairs at the National Hydropower Association. And I am thrilled to be talking with you on National Hydropower Day. As a way to collectively recognize hydropower's contribution to the nation's clean energy infrastructure, we have established August 24th as National Hydropower Day. I am joined by an exciting panel of speakers who know very well the value that hydropower plays on the grid and the role that it will play an hour clean future.

Before I introduce our speakers, I wanted to talk a little bit about the background of hydropower in the U.S. Hydropower and pump storage represent a little over 102 gigawatts of electricity capacity – it is about 38% of all renewable generation. It can provide almost every service that the grid needs, including critical balancing services that are vital to the integration of other renewables. In fact, we like to say that hydropower often punches above its weight in grid services. A couple of examples to illustrate this is 7% of electric generation, but provides 40% of all nationwide. Hydro is about 12% of all the installed capacity in California, but routinely provides 60% of all spending reserves. Just to demonstrate how this is for viability and resilience. About half is in the hands of private companies. The other half is managed by the federal government.

Today we are going to hear perspectives from that latter half. The four hydropower marketing administrations were created in the early 20th century largely to sell excess power produced by federal dams, whose primary purpose was something other than electricity generation be it flood control or irrigation. For decades, these power marketing administrators were able to provide low-cost, clean electricity to preference customers. They were essential in electrifying the rural parts of the country. To help us celebrate National Hydropower Day, we are thrilled to be taking part in a panel discussion with the leaders of the federal hydropower marketing administrations as well as the Department of Energy.

With that, let me introduce our speakers. First, we have Patricia Hoffman, who is the acting assistant secretary, office of electricity, at the Department of Energy. Welcome, assistant secretary Hoffman. Next we have John Hairston, the administration of the Bonneville power administration. I think this is one of the oldest of the four VMAs. Welcome administrator John Hairston. Next we have Virgil Hobbs, the administrator of the southeastern power administration. And we have Mike Wech, administration of the Southwestern power administration. Welcome administrator Mike Wech. And finally we have Tracey LeBeau, acting administrator of the Western power in administration, welcome, administrator Tracey LeBeau. Thank you all for joining us.

I thought we would just dive right in with some questions. I wanted to address this first one to administrators Hairston and Virgil Hobbs. Anyone else feel free to jump in. Administrators – Hydropower has not received as much attention as wind, solar, and natural gas. Sometimes there can be a knowledge gap and misunderstanding when people start talking about hydropower technology and dams in general, how would you explain hydropower to someone?

JOHN HAIRSTON: All right, well thank you, Cameron. I’m John Hairston. I will take a shot at answering that question first. I will start off by saying, you are right. You know, there has not been a lot of press, regarding hydropower. Wind and solar are certainly the sexy resources right now. And so, when I think about hydropower, I like to think about it in the fact that people tend to forget that hydropower is the original energy resource, if you think about it, humans have used water to power mills and pumps for hundreds of years. And I would like to remind people that dams work by harnessing the power of flowing water. Which means that the fuel is free and has no emissions. It is renewable, it is carbon-free.

Given our abundance of hydropower resources in the Northwest rivers, our power system is the cleanest in the nation, if not the world. Beyond its carbon-free and affordability attributes, hydropower is dispatchable, it means he can ramp up and down when we need it. When you compare that to other renewables that are more weather-dependent, that makes our attributes with hydropower just more valuable. And I think, also, you know, I would like to say that with all of the thermal resources that are being taken off-line, like coal. The Northwest will rely on dispatchable resources like Hydro to meet the power demand, especially during peak demand periods and so, you know, when you think about hydropower and its attributes, it is really the perfect partner to other renewables. Because it can really fill those gaps. When solar and wind resources are not producing power. You know, sometimes the sun doesn't shine. Sometimes the wind isn't blowing. And so you need a really good partner to fill those gaps and hydropower really plays that role well.

CAMERON SCHILLING: Great, thank you, Administrator, Administrator Hobbs?

VIRGIL HOBBS: Cameron, I would you say, I do not really understand that there is a knowledge gap. Hydropower technology is as simple as gravity. Water runs downhill, unless we decide to pump back. But that falling water spins the turbine, that turns the generator and electrons flow. So, you know, I challenge the solar industry to that. I remember, I am dating myself, Barbara Mandrel used to sing back in the 70s back “she was country when country wasn’t cool.” Well hydropower was renewable when renewable wasn’t cool. As John mentioned, hydropower has been around since the 1880s. It is the only schedulable and reliable one that needs an all energy portfolio, certainly accepting your wind and solar, energy is the important component for that. We need to recognize that those generation methods are intermittent. Hydropower is already ready to meet power demands and it can be called upon on those cloudy days, so, like I said. I would just say, hydropower is that dependable resource that is renewable and can be there for us.

CAMERON SCHILLING: Yeah, we certainly have a rich history of it in this country and around the world, too. As the first renewable. Anyone else want to jump in on this question about how you, kind of, explain the benefits of hydropower?

All right? Let's move onto the next one. I wanted to start with assistant secretary Hoffman. Ms. Hoffman, you very well know that President Biden sent an ambitious goal of using 100% clean energy by 2035 and having a net zero emissions economy by 2050, that is a pretty aggressive goal. To do this, I think it is clear that we will have to substantially ramp up the production of all renewables. How can hydropower support the integration of other renewables, specifically like wind and solar?

PAT HOFFMAN: So, thank you, Cameron, for the question. As you mentioned, the president does have an aggressive strategy for combatting climate change but 100% clean energy 2035. And that zero emissions economy by 2050. As was mentioned by John and Virgil, hydropower is a very important aspect and a very important contributor to our clean energy portfolio. It is generally a mixed use asset. Not only doesn't provide power, but it also provides flood control, irrigation, different support, and other uses. Just for everyone's awareness, today the U.S. Army Corps of engineers operates approximately 75 power plants. Making them the fifth largest electric supplier in the United States. So there is a significant capacity of hydropower, as you have mentioned in your opening statement. As a resource for the U.S. electric industry. It was also discussed that hydropower is a flexible resource and dispatchable resources. What this does, it allows us to balance the variable generation in the United States. Other renewable technologies, specifically, solar and wind. It also provides essential reliability services. And, as the grid operates on a very reliable and cost-efficient manner, we need to have technologies that are flexible as possible. And hydropower is at the core of those technologies. One thing I would like to mention is, that NREL has done a study recently and it is called the North American Renewable Integration study -- it shows that without the ability to adjust power output from the US and Canadian hydropower fleet, annual system cost could increase by $2.3 billion, so we need to have the flexibility. We need to be able to support a reliable operation of our electric grid. And hydropower is a multi-benefit resource and critical to the clean energy transition.

CAMERON SCHILLING: Thank you for that. I wanted to pull in administrator Tracey LeBeau. Have you seen hydropower acting as an integrator of other renewables in the WAPA territory?

TRACEY LEBEAU: It has. And thank you for the question. Everyone has made the case in a lot of ways. The beauty of hydropower for me is the combination of attributes that has been mentioned a little bit so far. It makes it such a unique and clean powerhouse, pardon the pun.

Amongst all the attributes that have been discussed, it was the original renewable. But it is also the original storage as well. That is also a really important attribute of what we bring to the generation. It also, as was mentioned, it provides both capacity and inertial mass to stabilize the grid. And it is highly flexible. So, I think, you know, if we really want a clean energy economy and electric grid, we really need to have pass hydropower in that mix. And we should consider to do more to pair solar and wind to provide a backbone resource and carry electricity through the intermittency of wind and solar supply.

And we can, and we have helped facilitate the delivery of renewables by shepherding the permitting of renewables interconnected into a transmission system. And we’ve provided debt financing to new or expanded transmission seeking to deliver renewables in our footprint. Today, you know, we are highlighting hydropower and the value propositions in our view is that, you know, it can allow for renewables to capture more and more of the energy component. We can also ensure the reliability by providing regulation ancillary services and black start capability to ensure grid stability as we put more and more intermittent uses on the grid.

CAMERON SCHILLING: That is a great point about hydropower being a form of storage. Which is not often recognized for that. Let me pull in Administrators Virgil Hobbs and Mike Wech on this question for hydropower being a force multiplier for other renewables.

VIRGIL HOBBS: Well, I just wanted to add what Tracey and Pat said. Other renewable resources, they lack the natural energy storage mechanisms of hydropower – the lakes, rivers, that is our fuel. Southeastern, we are in the early stages, working with our electrical cooperative customers to provide extent support for the new solar installation. Clouds, when I am talking about clouds, I am not talking about storage, nebula places. I am talking about little vapor-bearing clouds, you know, they come over a solar array and they can greatly, and rapidly, reduce energy output. So our hydropower resources need to be nimble enough to on the come online and immediately replace that lost generation. Then come off-line when the clouds dissipate. So, you know, I mentioned bump back earlier, and, you know, where we have specially designed hydropower locations, that can defy gravity, and recharge our lake batteries, if you will. The Southeastern captures all peak energy from our run of river hydropower. Pump water upstream, which would be Russell and Carters, pumps generation stations. So the next day, those two powerplants are ready to produce 1100 megawatts, zero emissions, energy for our public power customers.

MIKE WECH: Cameron, thank you for the question. And most of the administrators have already covered it, but I would a kind of bolster it to say that, you know, as Tracey mentioned. Since we have that storage capability, we can come on during the super-peak times of the day and assist those renewables of all types in meeting the peak demands. We can come online quickly. We can ramp up. To meet the demand quickly. And we are there, if you will, as a backstop in many cases to fulfill the shortfall periods where an intermittent renewable resource may not be able to fulfill the demand. I would also offer that our load-following capability, our ability for these hydro-units to go up and down, ramp quickly, respond to emergencies, that fills in gaps what other renewables may not be able to perform. And, you know, really, when you look at hydro-overall, all the different types, whether it is pump storage, running the river, reservoir type projects. We fulfill, really, the best of all features. We have base load capability with that storage. We have quick response peaking capability. We have load following. And we are a carbon-free energy producer.

CAMERON SCHILLING: Yeah, something that the grid is going to need a lot more of is clean flexibility and Hydro has been providing it for a long time. I wanted to switch gears and talk a little bit about some challenges. I think, as we have seen in the news almost on a daily basis, extreme weather events like the polar vortex, the wildfires, currently raging in the West, and the heat waves that we are experiencing. They can significantly impact our critical infrastructure. I would like to get a sense from you all, how has hydropower helped during these emergency situations? Let me start with assistant secretary Hoffman.

PAT HOFFMAN: Thank you for the question. We have all been very challenged, with respect to the events that have occurred. It is very much an awakening for everybody in the United States. The events are caught, they have shown some vulnerability in our infrastructure. As well as the need for infrastructure investment. And so, the challenge that we need to partner investment, we need flexible investments, we also need to have transmission capacity. But hydropower is a resource that has provided support to each of these events. And Mike can go into the details of how hydropower has supported the polar vortex and ERCOT situation, as well as the other administrators who can talk about the resources that hydropower has supported in the West, during a heat wave. But really, when it comes down to these events, and these extreme events, all hands-on deck. We need to utilize every resource available. And some of the most reliable sources include the hydropower fleet in the United States in support of the reliability to the electric system.

CAMERON SCHILLING: That's great. Administrator John Hairston, I was hoping that you could kind of address, how the hydropower fleet at BPA was able to help in the California blackouts last summer?

JOHN HAIRSTON: All right. Thanks, Cameron. And yeah, you know, this is a very, you know, top of mind topic. And I know, the last several weeks, we have probably gotten much more experience than we would have liked. It is not new. I would say this, while it is not new, the frequency is increasing as well as the severity of some of the events. But the one thing that is common, the proven performance of the Hydro system in helping to meet the demand during these events.

You know, specifically BPA was able to meet high summer demands, through careful power and transmission planning. Making sure that we needed to do the things that we needed to do from a forward marketing perspective. As well is following the management work that we are doing on the transmission system so that when these things occur, we have a resilient system. We can get up and running fairly quickly. I think it goes without saying, without certain dams operating, BPA would have likely had to work with our local customers to shift loads. Which basically means altering the pattern of, you know, their use. And we may have experienced power outages and rolling blackouts to protect the system from wider, cascading outages. So, you know, the viability and the attributes of the Hydro system is important. And a key attribute of that, the flexibility, you know, that is a common theme you’ve been hearing in this discussion and this becomes even more evident during these extreme weather events like the heat waves that we went through. The heat dome, where you have each individual Hydro plant with its flexibility, it can ramp up or down to meet unexpected changes in power demands. When you think about the system, as a whole, it is flexible. Because it can be watered through the system in a way that makes it best, you know, best used for each plant, and the geographic diversity of the Hydro system across our region, with major generation on the upper-Columbia, lower-Columbia and lower-snake rivers, and it really gives our operators options to solve any unique challenges that occur during, whether it is a heat event or a winter event.

I think a great example, you know, from my perspective, during this last winter storm, we had technical issues at our chief Joseph dam on the Columbia you river, and required us to lean more on our snake River dams. Adjusting operation, you know, during the middle of the storm was something that was important for us in hydropower, because of how quickly we can ramp up and down, that really provided that flexibility for us to address that issue. And, you know, I just, you know, I think that without the dams and the flexibility, that they provide, powering through these recent heat waves could have been much more expensive and operationally challenged if we did not have that flexibility.

CAMERON SCHILLING: Great, a lot of planning goes into that flexibility. Any others want to jump in on this question?

TRACEY LEBEAU: Sure, I can address some of the issues that we have been seeing here in the WAPA footprint. So, there are two types of emergencies that stick out to me. There are those types of emergencies where generation cannot meet the demand and leads rolling blackouts throughout the system. And then there is the prospect of potential cascading outages where entire portions of the grid may go off-line due to equipment failures or some other issue.

So in the first case, hydropower is a highly-flexible resource as we have discussed already. And two recent examples, where we were able to leverage that flexibility, was during the polar vortex earlier this year. Enough surplus hydropower was generated, a lot of very close coordination between us and the Army Corps, to generate some surplus and keep the lights on for almost 800,000 homes for three days in the coldest parts of the US during that event.

In California, we were able to work with our partner to provide hydropower from as far away as the Grand Canyon and Hoover dams, what was needed, last August, a year ago during the prospect of rolling blackouts. So, the second case, such as the event of a massive grid outage, like we saw in 2011 here in the Southwest or in 2003 in the Northeast, hydropower was one of the few energy resources that can survive black start services. Many people do not realize the power plants themselves need electricity to run and are affected by outages, just like homes and businesses. Since hydropower does not take much energy to get going, it is one of the fastest resources to restart after a large-scale blackout. I will say another weather-related event that we are currently trying to work through is drought. And so, we are in close coordination with our agency partners to manage efficiencies and operational procedures that we can take to mitigate, you know, some of the issues associated with drought and hydropower generation.

CAMERON SCHILLING: Thank you for that. Administrator Mike Wech, I wanted to get your thoughts on hydropower's performance during some of these extreme events.

MIKE WECH: Thank you, Cameron. Over the years, unfortunately we have experienced many events that you have noted, in the February 2021 polar vortex event, Southwestern and the partners at the Corps of Engineers, we, like Tracey's group in WAPA, provided a key role in providing clean, renewable energy around the clock to our 6 Midwestern states that we market to, which is Texas, Louisiana, Arkansas, Oklahoma, Missouri, and Kansas. And while it many other energy resources experience difficulty meeting several of the cold weather challenges, hydropower was there. And it was there as a consistent energy provider during this critical time of need.

Additionally, we have experienced and played key roles in power system restoration events following hurricanes, multiple times in Texas, Louisiana, over the past few years. And then, just a few events that come to mind over the years have been hurricane Rita in 2005, Hurricane Harvey in 2017, and hurricane Laura in 2020, are three events where hydropower was used to either block start the system and work with other utility partners in the area to provide emergency restoration services and power to critical areas. Or we came online or stayed online during those events to serve regional load pockets in the areas surrounding those projects, until such time as the transmission and distribution lines could be restored to service. So, like I said, unfortunately, we have been part of several of these events over the years. But hydropower has always played a critical role in restoration.

CAMERON SCHILLING: Yeah, that's great. And I encourage anyone to read the root cause analysis in the blackouts, because they found that hydropower provided above and beyond its resource obligation, even considering a challenging watering year, I think it just demonstrates how resilient the technology is.

I've wanted to shift gears to my last question. And I will start with assistant secretary Hoffman. You know, having abundant clean power on a secure, resilient, reliable energy grid is going to be critical in the future. We are going to be able to -- we are going to have to move to cheaper, cleaner electricity from where it is located to the load centers. Can you talk about how hydropower can help modernize our grid to support these goals?

PAT HOFFMAN: So thank you, Cameron. I think that this question encapsulates a lot of conversation that has already occurred, as part of this panel and this dialogue, but one thing to really emphasize, as part of this, in order to really have the affordability and to think about the cost management as we evolve our electric grid and our generational portfolio, is the value of storage. Recognizing that pump storage hydropower provides 93% of the grid scale energy storage today in the United States. It is an extremely important asset, with respect to the energy storage equation.

If we do not have the storage on it, we're going to have to rely on alternative forms of energy storage, which we would also have to rely on demand response. Which was already mentioned as part of the opportunities from a cost effectiveness, for providing flexible support to the system.

So we recognize the energy storage, it is going to be a critical part of the equation. And by having hydropower in the mix. It allows for that flexibility that the system requires, the black start, the other reliability services. But in order to manage cost we will have to look at how we optimize the system, recognizing that a key part of that is energy storage.

CAMERON SCHILLING: That is great. Administrators John Hairston and Tracey LeBeau, any thoughts on this question? Any others want to weigh in?

JOHN HAIRSTON: Yes, well, no, Cameron, I wanted to weigh in. I was waiting to see if Administrator LeBeau wanted to mention something. But I think that Pat hit on a couple of key important areas. In terms of, you know, storage and costs. So, when I think about those two things, I think about that the storage piece really talks about adequacy. Us having enough resources in the region, as well as the cost side, it is really an efficiency discussion in talking about how do you attempt to modernize this antiquated system that we have in order to get more out of it.

I think of it in two areas: resource adequacy and grid modernization. And resource adequacy you know, in my mind, the ability to meet consumers energy needs during times of peak demand. It is like making sure that you have enough money in the bank account to cover your known expenses as well as the cost of emergencies, you need to be able to access that money when you need it, the liquidity piece of it. So similarly, you look at utilities. You need to be prepared to meet energy demand on all standards. Not just average condition. So, in other words, we need the capacity. Which relates to the storage argument that Pat was making. That liquidity or that available energy that can be called upon when needed, during any extreme event. And so, you know, that is the dispatchability aspect of Hydro that I, and the rest of the administrators, have talked about during the discussion. Which I also must, you know, if you look at it holistically. You emphasize that it includes deliverability. The transmission system is so critical to making sure that power can be delivered from point a to point B. So the federal high Hydro system in the Northwest, and the vast transmission system that we have, that is connected -- I mean, really, you know, consists of the largest machine that you could think of on the planet. And so, assuring that the machine plays a key role in resource adequacy, in our region, is important, particularly when we are going to depend less on thermal generation, Hydro will certainly, you know, allow us to make a clean energy future a reality.

Now, I mentioned the other piece of this, grid modernization, so, BPA, we are halfway through a six-year modernization to enhance the effectiveness and reliability of the grid. This includes 35 some odd projects designed to increase automation, improve accuracy, and enhance visibility to how the federal system and transmission systems are functioning on a real-time basis. So these projects will allow us to really leverage changes in the evolving Western electricity market. Which we are seeking new opportunities from marketing surplus, and transmission and maximizing the existing infrastructure or resource infrastructure that we have.

TRACEY LEBEAU: Sure, oh, I was going to say that I had a few things to add as well.

CAMERON SCHILLING: Yeah, go ahead.

TRACEY LEBEAU: One of the items that we touched upon it earlier, you know, we do have a lot of dams throughout our country. But, actually a small percentage of those are actually equipped to produce hydropower or to facilitate storage. So I think there is some opportunities there for us to take a look if there, is an opportunity there to expand either generation or storage.

And the other aspect of this, you know, we are also in transmission utilities. As all of us built transmission, we tend it to these hydroelectricity plants, that we deliver from that was put into place, and created investments over the course of decades. I can with WAPA, To consult with WAPA, and respond to WAPA, we have got over 17,000 miles of transmission in our 15 state footprint -- there is a lot of interest, particularly in the Eastern part of our system, where we have got fantastic wind that is looking to go to the Western part of our system. And so, I think, there are definitely some discussion and dialogue and planning going on pretty actively right now about how we can facilitate that.

Also, with respect to our 17,000 miles of line, and all of the critical substations that we have throughout our footprint that are located in some very interesting areas. There are some opportunities for possible storage to those facilities that is of great interest both to WAPA and I know for sure the community. I think there are really some opportunities to optimize the infrastructure that we already have already invested in.

CAMERON SCHILLING: Thank you. Certainly, a lot of opportunities with pairing for other resources. I know that we have covered a lot of topics in a short amount of time. But I do want to give you all a few minutes for any closing remarks on the value of hydropower on national hydropower day. I will start with assistant secretary Patricia Hoffman.

PAT HOFFMAN: So, thank you, Cameron. I would like to thank the panelists for a wonderful discussion today. I would like to close with three points that I would like to make.

In the first point is, just how critical hydropower is to our country's energy future. It is critical to achieving the President's goals in supporting clean energy, a reliable electric grid and resiliency in our electricity in our infrastructure. It is absolutely important that we focus on investing in resources that will continue to drive a clean energy mix in the United States. But will also support the growth of new electricity demands. As we look at supporting electric vehicle development. As we look at increasing electrification in the United States, so that portfolio and having hydropower as part of that mix is absolutely critical.

The second point I would like to make is the opportunity. Tracey started talking about it. But, our DOE hydropower vision as part of the office of energy efficiency and renewable energy, finds that U.S. hydropower can grow in the United States. From the 102 gigawatts, I believe you mentioned earlier in the panel session, to nearly 150 gigawatts by 2050. So there is opportunity there for continued investment in a renewable, clean resource as part of our hydropower system. And that will allow us to capitalize on the value.

But the third point, is in the near-term, we recognize that we are in a drought, heat-intensive phase from a climate perspective. And we are going to have to maximize the capacity of the existing assets. And so, as we look at it, we want to be able to maximize the utilization of the run of the river. And also increase the efficiency of the existing hydropower fleet, in coordination with the U.S. Army Corps of Engineers and And the Department of Interior Bureau. We want to really think about how do we really look at hydropower as an asset for the future. And I believe it has great promise and great opportunity as being part of our clean energy portfolio.

CAMERON SCHILLING: Great, thank you, assistant secretary, administrator Hairston, any closing remarks?

JOHN HARISTON: Thanks, Cameron. I want to thank you for the great conversation, and the rest of the panelists for a lot of thought-provoking comments and remarks. Earlier I mentioned leveraging evolving markets and modernizing the grid, so, you know, a lot of folks may be wondering why BPA, a federal agency, with somewhat limited resources, is driven to invest in these things.

I want to say that the answer is, you know, we provide a public service, and anyone served by a public or people's utility district, municipal, electric utility ,or rule electrical co-op in the Northwest really enjoys the benefits of low-cost renewable hydropower, and so, you know, our mission is to deliver the best value to our customers and in this kind of ever-evolving energy industry, that means investing in opportunities to modernize and improve operations, so that we can meet our customer's changing needs and the region's changing goals for that matter.

Now, we have partnered with our public power customers for decades to deliver clean reliable electricity to businesses and residents across the region. And, you know, those partnerships are as important today as they have ever been, as we kind of lead the region through this climate crisis. And speaking of partners, BPA has really been fortunate to work along the Army Corps of Engineers, and Bureau of Reclamation, as federal partners we work together to preserve and enhance the Northwest hydropower resources. And, you know, the federal hydropower in this region, it is really the original source of electricity. And with climate change bearing down on us. You know, I feel it is comforting to know that we have a reliable base of low-cost, carbon-free power and it is going to be a key, a central key to us unlocking our clean energy future. And I think, you know, from my perspective, as administrator, I am proud to be part of this worthy endeavor. Thank you.

CAMERON SCHILLING: Thank you, administrator Hobbs?

VIRGIL HOBBS: Thank you, Cameron. Nice segue, John. I appreciate that. So Southeastern, we are always looking for ways to improve our power product for our municipal customers. During the pandemic, Southeast was able to distribute the first renewable energy certificates for federal hydropower. 1.7 million certificates, corresponding to actual hydropower generation, John H Kerr and Philpott powerhouses between January 2019 and December 2020, these were recorded that my generation was recorded in DJM generation attribute tracking system, and was transferred to power customers in Virginia and North Carolina, which provided a very welcome boost to their economies and communities as well they were able to take full renewable energy benefits with that hydropower generation.

And then you know? Customers, in all of our other, our three market systems, they are eager to take possession of their certificates. Southeastern will begin the public process in our Cumberland system, which serves customers in eight states both inside and outside the Tennessee Valley Area.

So, I would also be remiss if I did not think NHA for this opportunity to plug hydropower. I also want to thank the dedicated civil servants of the Southeaster Power Administration and our generating partner at the U.S. Army Corps of Engineers. They contract, they dispatch, they operate, maintain and they support all of those functions and kinds of things to deliver clean renewable carbon-free hydropower to more than 12 million energy customers. Just on behalf of Southeastern I want to say happy National Hydropower Day.

CAMERON SCHILLING: Thank you, administrator. Administer the Wech, any closing remarks?

MIKE WECH: Thank you, Cameron. I want to thank the National Hydropower Association and the department and my fellow panelists for the opportunity to recognize the National Hydropower Day.

You have heard about many of the benefits and advantages that hydropower brings to the renewable energy landscapes and to the goals of the Biden administration, we also face a lot of challenges not unlike any other energy resource. As climate change impacts occur, drought, as we talked about today, looms as a key threat to our marketing plan and our program. The loss of fuel resource for hydropower production can impact millions of end users of this renewable resource. Planning for drought impacts are a priority for our staff here at Southwestern. One of the several ways that we are preparing for drought and its impacts, to the threats to the hydropower program, while minimizing rate impact to our customers is to develop financial strategies for purchasing placement power. We are working with the department, and many others, to implement self-financing initiatives that will allow Southwestern to establish some sufficient financial reserves. If we enter a long-term, extended drought period, we will have the ability to fulfill that replacement power need. This initiative also, with the help, provides rate stability to our end use customers. While the current drought situation will result in extensive purchase power expenses that have to be repaid in a short-term and imposed rate volatility, if we can get this implemented, It will allow us to have the financial reserves available to mitigate rate volatility by flattening those spikes of those heavy purchase period. We look forward to implementing those solutions and many others to the challenges that we face with climate impacts in the future.

We are proud to contribute to the diversity of the energy resource portfolio across the nation, quite frankly, Southwestern and our employees are honored to send the 10 million American citizens and end users we have with clean, renewable, carbon-free energy. Our heritage goes back 78 years to our inception with the Department of Interior and then later to the Department of Energy. And we look forward to decades of service to the American public to come. Thanks for the opportunity to be here today.

CAMERON SCHILLING: Well, thank you, administrator Tracey LeBeau. I think you are in the closing position. Any final remarks?

TRACEY LEBEAU: Well, I am fighting the urge just to give it an amen to end it. [ Laughter ] I think everybody made fantastic points. I think all of them resonate very strongly with the Western Area Power Administration as well. For more than 100 years, hydropower transmission that was built to carry across the country, you know, we have talked about it today. It has provided renewable, reliable electricity to millions and millions of Americans.

And it has provided all of those other really important goals. Flood control. Supporting navigation, recreation. And water and irrigation supplies throughout all of the territories in which we operate. So I am very hopeful as technology matures, and we can address the historical concerns that have surrounded hydroelectric development. As capacity becomes available and existing lines particularly as we’re seeing retirements on our systems. That will spark some really intriguing opportunities, I think, for all of us. And for the customers that we serve. I think there is also a way for us to play a part in the climate change solution.

So, I will share with everybody that I know that our WAPA employees are also very proud and committed to being part of that mission that provides the original renewable generation to the communities in which we live. And believe in. And I am happy to be part of today's event. Thank you.

CAMERON SCHILLING: Thank you to all of our speakers. You all do such important work that is critical to our clean energy future. I think you articulated well, not just the power of hydropower, but the value of our federal fleet that it provides on a daily basis. I appreciate all that you do. I also want to offer NHA as a resource to you. If we can be of help, we would like to partner more.

In closing, thank you for joining us today. We hope you found this discussion informative. On National Hydropower Day, remember the Hydro is critical to the nation's clean energy infrastructure and resiliency of electric grid. It ensures the stability of the grid, by being flexible enough to provide dispatchable generation all while keeping the power system balance. Thank you again. Have a great day and I hope you enjoyed the discussion.