S. HRG. 119–366

PENDING LEGISLATION

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY

OF THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED NINETEENTH CONGRESS

SECOND SESSION

ON

S. 465
S. 1327
S. 3034
S. 3192
S. 3269
S. 3947

APRIL 15, 2026

Printed for the use of the
Committee on Energy and Natural Resources

Available via the World Wide Web: http://www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE

63–445 WASHINGTON : 2026

COMMITTEE ON ENERGY AND NATURAL RESOURCES

MIKE LEE, Utah, *Chairman*

JOHN BARRASSO, Wyoming
JAMES E. RISCH, Idaho
STEVE DAINES, Montana
TOM COTTON, Arkansas
DAVID MCCORMICK, Pennsylvania
JAMES C. JUSTICE, West Virginia
BILL CASSIDY, Louisiana
CINDY HYDE-SMITH, Mississippi
LISA MURKOWSKI, Alaska
JOHN HOEVEN, North Dakota
MARTIN HEINRICH, New Mexico
RON WYDEN, Oregon
MARIA CANTWELL, Washington
MAZIE K. HIRONO, Hawaii
ANGUS S. KING, JR., Maine
CATHERINE CORTEZ MASTO, Nevada
JOHN W. HICKENLOOPER, Colorado
ALEX PADILLA, California
RUBEN GALLEGO, Arizona

SUBCOMMITTEE ON ENERGY

DAVID MCCORMICK, *Chair*

JOHN BARRASSO
JAMES E. RISCH
TOM COTTON
JAMES C. JUSTICE
BILL CASSIDY
CINDY HYDE-SMITH
JOHN HOEVEN
RUBEN GALLEGO
RON WYDEN
MAZIE K. HIRONO
ANGUS S. KING, JR.
CATHERINE CORTEZ MASTO
JOHN W. HICKENLOOPER
ALEX PADILLA

WENDY BAIG, *Majority Staff Director*
CHRIS PRANDONI, *Majority Deputy Staff Director and Chief Counsel*
JAKE MCCURDY, *Majority Policy Director for Energy*
JASMINE HUNT, *Minority Staff Director*
SAM E. FOWLER, *Minority Chief Counsel*
ANAIS BORJA, *Minority Energy Policy Director*

CONTENTS

OPENING STATEMENTS

WITNESSES

ALPHABETICAL LISTING AND APPENDIX MATERIAL SUBMITTED

The text for each of the bills addressed in this hearing can be found on the Committee's website at: https://www.energy.senate.gov/hearings/2026/4/subcommittee-on-energy-to-receive-testimony-on-pending-legislation

PENDING LEGISLATION

WEDNESDAY, APRIL 15, 2026

U.S. SENATE,
SUBCOMMITTEE ON ENERGY,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:30 p.m. in Room SD–366, Dirksen Senate Office Building, Hon. David McCormick, Chair of the Subcommittee, presiding.

OPENING STATEMENT OF HON. DAVID MCCORMICK, U.S. SENATOR FROM PENNSYLVANIA

Senator MCCORMICK. The Subcommittee will come to order. Thank you all for being here. Thank you to my fellow Senators. This is our first Energy Subcommittee hearing of this Congress, and I would like to thank Senator Gallego for helping me put this together. He will be here momentarily. And for other members who are here today who have introduced legislation, the focus of this hearing is on pending legislation. We have two expert witnesses from FERC. Thank you, gentlemen, for being here, and we look forward to being able to ask you some questions.

I just want to say in advance, in the event that there is any outburst or disruption, I am going to stop the hearing and ask for those folks to be removed—we have Capitol Police here—and allow us to continue on to the business of the day, but that may take a minute, if that occurs.

Today's hearing is focused on improving our nation's grid to ensure the energy we are producing, but also delivering electricity to end users in the most efficient and affordable way possible. And today, we are in the midst of something really extraordinary—this AI revolution and the reindustrialization that goes hand-in-hand. These two forces are driving a projected 25 percent increase in demand for electricity by 2030, which really is antithetical to the kind of affordability and opportunity for Americans that we want. That's why I view AI and energy as two sides of the same coin. They go hand-in-hand in today's world. And in this global AI race, we really have two choices—either we win and lead, or we follow. And in order to help win the AI race against China, our primary adversary, we need energy to power this new technology, to power the necessary compute. Today, speed-to-power is the name of the game.

In my home State of Pennsylvania, the energy we are producing is critical to protecting and advancing U.S. economic and national security. And Pennsylvania is the nation's second-largest producer of natural gas, we are the third largest electricity producer in the

country, and the second largest producer of nuclear power. Pennsylvania is providing not only the power for new manufacturing and electricity generation, but also for well-paying, family-sustaining jobs, which are obviously so critical. Pennsylvania is also at the cutting edge of a radical transformation. We saw this last year at the Energy and Innovation Summit that I hosted in Pittsburgh, where $92 billion of investment in new data centers and energy and power was pledged by the CEOs around the table. At the time, many of them public companies making these commitments, very significant and very certain. But we know that we need to get these electrons from their generation source to their end users. And we know that Pennsylvanians should not see higher power bills because of data centers or other large-load projects.

The bills we will examine today look to address speed-to-power challenges, including unlocking more capacity from our existing grid and avoiding long lead times. I am proud to have authored two of the bills we will consider today. There will be others, of course. The first is the Liquid Cooling for AI Act, which I introduced with Senator Chris Coons. This legislation is designed to help ensure American AI infrastructure is the most efficient, resilient, secure, and advanced in the world.

There he is. Senator Gallego, how are you?

I said great words and words of gratitude for you putting this together.

Senator GALLEGO. Of course.

[Laughter.]

Senator MCCORMICK. Liquid Cooling technology can better accommodate advanced chips and AI infrastructure, like data centers, while better managing energy consumption and strain on utilities.

The second bill is the Reconductoring Existing Wires for Infrastructure Reliability and Expansion Act. That's a mouthful, but it's important. It's something I introduced with Senator Welch, who I think is here as well. There he is, yes. We look forward to hearing from him in a minute. This bill will cut permitting delays and accelerate the deployment of innovative grid technologies through reconductoring.

Both of these bills are meaningful steps forward in reducing permitting delays and helping us to win the AI race, but there is still so much work to be done. With that, I look forward to hearing from our witnesses today. But first, I would like to turn to Ranking Member Gallego for his opening statement.

OPENING STATEMENT OF HON. RUBEN GALLEGO, U.S. SENATOR FROM ARIZONA

Senator GALLEGO. Thank you, Chair McCormick, for holding today's hearing. We are here today to consider a handful of bills dealing with our energy system, a system that is seeing a lot of significant pressure.

Energy demand is rising faster than we have seen in decades, and it is not slowing down any time soon. The U.S. is projected to see a 25 percent increase in electricity demand by 2030, driven by the growth of data centers, manufacturing reshoring, and building transportation electrification. In some ways, these are good problems to have because they are signs of a growing economy. They

are also challenges we have to get right. At the same time that we have seen increased demand, energy is becoming more and more unaffordable. Energy prices rose twice as fast as overall inflation last year, and one in three Americans reported cutting back on food or medicine to cover their utility bills.

To make matters worse, gas prices have skyrocketed all over the country because of Trump's war in Iran. As demand continues to rise, so will costs. If we want to meet this demand without making costs even worse, we need to build more and become more efficient. We need permitting reform to build new lines and increase energy production and generation. And as generation increases, our transmission systems will need to be ready to move energy from where it is generated to where it will be used because at the end of the day, it doesn't matter how many electrons we produce—if we can't get them where they need to go, it makes zero difference.

Right now, our grid system is not going to meet those demands. According to the DOE, 70 percent of U.S. transmission lines are over 25 years old, which is more than halfway through their operational life spans, and 55 percent of transformers are much older than that. Studies estimate that the national transmission system will need to at least double in size by 2050 in order to maintain reliability and keep costs low. One study found that in 2023, insufficient capacity on the grid cost customers $11.5 billion. The grid we have is simply not the grid we need.

This isn't just about cost, it's also a public safety issue. An outdated and strained grid makes us more vulnerable to widespread blackouts, and in hot weather states like Arizona—you guys may have heard, it gets hot there once in a while—a blackout in 115-degree weather is a matter of life and death for thousands of people. That's why, when I released an energy plan last year outlining how we can make energy more feasible, affordable, and reliable for Americans, I made transmission a key pillar because a reliable grid is impossible unless we get energy where it needs to go quickly and when it is needed.

All this to say there is strong consensus, among the challenges we face, that what we are here to do today is to work on solutions that are feasible, productive, and effective in growing our grid and meeting demand significantly. There are some strong bills in today's markup to do that. One that I will be proud to support is the Chairman's Liquid Cooling for AI Act, which would make sure we have cooling systems capable of supporting the advanced chips manufacturing production, which is a big deal in Arizona, in a way that won't drive up costs for consumers. Another promising bill is the Advancing GETs Act, which would incentivize developers to bring new grid efficiency tools online and increase our transmission capacity.

There are other bills that I have questions about how they will be implemented, which I will get to during questioning. And that tells me what our goal is here today—figuring out how to move forward and ensure that the best ideas are being put forward and pressure-tested by experts, so that when Congress has the opportunity to act, we are ready to do so. Thank you, and I yield back, Mr. Chairman.

Senator MCCORMICK. Thank you, Senator Gallego.

I see Senator Welch is here, which is great, to speak on one of his bills which we are considering today. So, I turn to the great Senator from Vermont.

OPENING STATEMENT OF HON. PETER WELCH, U.S. SENATOR FROM VERMONT

Senator WELCH. Well, thank you very much, and I am going to violate protocol here by saying something nice about the Chairman. It's terrific to work with you on this. And here is the serious thing, it's not just the term bipartisan, but the reality is, and this is what Senator McCormick and I realized—you are getting significantly higher rates in Pennsylvania. We are getting higher rates in Vermont. And a lot of the challenges that we face affect the people we represent. It's not a red state/blue state deal. It's like, high electricity bills are tough on whoever it is we represent. And Senator Gallego, you were talking about how we really have to modernize our transmission system.

But the bill that Senator McCormick and I are promoting says let's take the system we have and enhance it through technology. There are a lot more electrons that can flow through what we have. That is such a less expensive way to increase the access to the electrons that we need. So, you know, we use the term common sense, but what it is really grounded in, and Senator McCormick, I so appreciate you being willing to work with me, and we share the view that working together we can make more progress. But it's because the identical challenges that those ratepayers in Pennsylvania face are the identical challenges of ratepayers in Vermont. And this is a real Maine kind of thing—take what you have and get more out of it—use it, and use it more efficiently.

So, I so appreciate this Committee, partnering with you, Senator McCormick, and thank you so much for the opportunity to be here and promote this legislation.

Senator MCCORMICK. Thank you, Senator Welch. I share that sentiment. Thank you so much for being a great partner on this.

I would also like to thank the two witnesses that we have here today. First, we have David Morenoff, the Deputy General Counsel of the Federal Energy Regulatory Commission (FERC). And the second is Mr. Kal Ayoub, the Director of the Office of Electric Reliability, also at FERC.

So, what I would like to do is, ask the witnesses to come forward, and we will ask you to each have five minutes and then we will turn to questions. And for my fellow Senators who are here, Senator King and Senator Padilla, I am happy to cede my questions, my time, to each of you after Senator Gallego, and you can ask your questions, and I will wrap up in the end. Okay?

All right, Mr. Morenoff, the floor is yours for five minutes to give your opening statement.

STATEMENT OF DAVID L. MORENOFF, DEPUTY GENERAL COUNSEL, FEDERAL ENERGY REGULATORY COMMISSION

Mr. MORENOFF. Chairman McCormick, Ranking Member Gallego, and Members of the Subcommittee, my name is David Morenoff. I appreciate the opportunity to appear before you today as a member of the staff of the Federal Energy Regulatory Com-

mission. I currently serve as the Commission's Deputy General Counsel. The views I express today are my own and are not necessarily those of the Commission or of any individual Commissioner. The Commission's jurisdiction covers a range of vital energy-related responsibilities. For example, it is the Commission's responsibility to ensure that rates for the wholesale sale and transmission of electricity, as well as the transportation of natural gas by pipeline in interstate commerce, are just and reasonable. The Commission is also responsible for overseeing the reliability of the nation's bulk power system. In addition, the Commission is responsible for siting needed energy infrastructure, including interstate natural gas pipelines, liquefied natural gas, and hydroelectric facilities. By fulfilling these responsibilities, the Commission helps to ensure that our country has a reliable and affordable supply of energy.

With these responsibilities in mind, Commission Chairman Laura Swett has recognized that our country is at a historic crossroads and has highlighted three priorities for the Commission: (1) keeping the lights on and the pipelines flowing at just and reasonable rates, (2) doing everything within the Commission's power to facilitate the connection of large loads and data centers, while also ensuring that the resulting costs are fairly allocated, and (3) maximizing the Commission's ability to encourage and facilitate infrastructure development, which is critical to reliability, safety, and our economy.

These responsibilities and priorities both drive the Commission's actions and align with the themes of the proposed bills that are the subject of today's hearing. Spurred in part by the demands of emerging large loads, such as data centers, our country is experiencing rapid growth of electric load unlike anything seen in at least several decades. To not only meet that growth, but also to do so in an affordable manner, it is important to interconnect new generation resources expeditiously. The Commission has approved proposals from the grid operators for several large regions of the country to expedite interconnection for generation resources that are more likely to be constructed and that will meet those regions' respective needs. The Commission also has acted on filings made by all jurisdictional transmission providers in compliance with the Commission's Order No. 2023, a unanimous Commission final rule on the interconnection of new generation resources.

Addressing a related issue, the Commission, in December, directed the nation's largest grid operator to establish transparent rules to serve data centers and other large loads that are co-located with generation. Those rules will safeguard reliability and protect consumers, impacting over 67 million Americans. The Commission has also approved innovative proposals from other grid operators to expedite interconnection of large-load additions and associated generation in a manner that accommodates the unique operational demands of large loads while also facilitating reliable interconnection and protecting other transmission customers. The bills that are the subject of today's hearing sound similar themes of reliability and affordability. Some of the bills identify potential reliability challenges, such as what too often have been frustratingly slow processes for the interconnection of new generation resources. Others

of the bills underscore the importance of making full use of existing electric infrastructure in support of affordability, including through appropriate application of grid-enhancing technologies.

If Congress determines that these important issues warrant providing further direction to the Commission and authorizing further tools for the Commission's use, the Commission stands ready to take on those additional responsibilities. Thank you for the invitation to testify before the Subcommittee today. I would be happy to answer any questions you may have.

[The prepared statement of Mr. Morenoff follows:]

Testimony of David Morenoff
Deputy General Counsel
Federal Energy Regulatory Commission
before the
Committee on Energy and Natural Resources
Subcommittee on Energy
United States Senate

April 15, 2026

Chairman McCormick, Ranking Member Gallego, and Members of the Subcommittee:

My name is David Morenoff. I appreciate the opportunity to appear before you today as a member of the staff of the Federal Energy Regulatory Commission (Commission).

I currently serve as the Commission's Deputy General Counsel. I am honored to have served in senior roles in the Commission's Office of the General Counsel since 2010. The views I express today are my own and are not necessarily those of the Commission or of any individual Commissioner.

The Commission's jurisdiction covers a range of vital, energy-related responsibilities. For example, pursuant to the Federal Power Act and the Natural Gas Act, it is the Commission's responsibility to ensure that rates for the wholesale sale and transmission of electricity, as well as the transportation of natural gas by pipeline, in interstate commerce are just and reasonable. The Commission also is responsible for overseeing the reliability of the Nation's bulk power system, as my colleague Kal Ayoub, Director of the Commission's Office of Electric Reliability, discusses in greater detail in his testimony. In addition, the Commission is responsible for siting needed energy infrastructure, including interstate natural gas pipelines and liquified natural gas and hydroelectric facilities. By fulfilling these responsibilities, the Commission helps to ensure that our country has a reliable and affordable supply of energy.

With these responsibilities in mind, Commission Chairman Laura Swett has recognized that our country is at a historic crossroads and has highlighted three priorities for the Commission: (1) Keeping the lights on and the pipelines flowing, at just and reasonable rates, (2) Doing everything within the Commission's power to facilitate the connection of large load and data centers, while also ensuing that the resulting costs are fairly allocated, and (3) Maximizing the Commission's ability to encourage and facilitate infrastructure development, which is critical to reliability, safety, and our economy.

These responsibilities and priorities both drive the Commission's actions and align with the themes of the proposed bills that are the subject of today's hearing. Spurred in part by the demands of emerging large loads such as data centers, our country is experiencing rapid growth of electric load unlike anything seen in at least several decades. To not only meet that growth, but also to do so in an affordable manner, it is important to interconnect new generation resources expeditiously. To advance that goal, the Commission has approved proposals from the grid operators for several large regions of the country (including the California Independent System Operator, PJM Interconnection, the Midcontinent Independent System Operator, and Southwest Power Pool) to expedite interconnection for generation resources that are more likely to be constructed and that will meet those regions' respective needs. The Commission also has acted on filings made by all jurisdictional transmission providers in compliance with Order No. 2023, the final rule that the Commission issued, unanimously, in 2023 to reform the rules governing the interconnection of new generation resources.

Addressing a related issue, the Commission in December directed PJM Interconnection, the nation's largest grid operator, to establish transparent rules to serve data centers and other large loads that are co-located with generation. Those rules will safeguard reliability and protect consumers, impacting over 67 million Americans. The Commission also has approved innovative proposals from other grid operators to expedite interconnection of large-load additions and associated generation in a manner that accommodates the unique operational demands of large loads while also facilitating reliable interconnection and protecting other transmission customers.

The bills that are the subject of today's hearing sound similar themes of reliability and affordability. Some of the bills identify potential reliability challenges, ranging from what too often have been frustratingly slow processes for the interconnection of new generation resources, to the potential for Federal agency actions that do not adequately account for reliability concerns. Others of the bills underscore the importance of making full use of existing electric infrastructure in support of affordability, including through appropriate application of grid-enhancing technologies. If Congress determines that these important issues warrant providing further direction to the Commission and authorizing further tools for the Commission's use in support of its mission, then the Commission stands ready to take on those additional responsibilities.

Thank you for the invitation to testify before the Subcommittee today. I would be happy to answer any questions you may have.

Senator MCCORMICK. Thank you.
Mr. Ayoub.

STATEMENT OF KAL AYOUB, DIRECTOR, OFFICE OF ELECTRIC RELIABILITY, FEDERAL ENERGY REGULATORY COMMISSION

Mr. AYOUB. Chairman McCormick, Ranking Member Gallego, and members of the Subcommittee, thank you for the opportunity to testify today. My name is Kal Ayoub, and I am the Director of the Office of Electric Reliability at the Federal Energy Regulatory Commission. The Office is responsible for leading the Commission's responsibilities in protecting, improving, and overseeing the reliability and security of the nation's bulk power system through effective regulatory oversight established in the Energy Policy Act of 2005. I am here today as a Commission staff witness. My remarks do not necessarily represent those of the Commission or any individual Commissioner. My testimony summarizes the Commission's oversight of the reliability of the bulk power system and recent Commission activity implementing that authority.

The Energy Policy Act of 2005 added Section 215 to the Federal Power Act, giving the Commission authority over mandatory, enforceable reliability standards for the nation's bulk power system, which includes the interconnected U.S. grid, but excludes Alaska, Hawaii, and local distribution systems. Under this provision, the Commission certified NERC as the electric reliability organization responsible for the development of reliability standards for Commission review, approval, and subsequent enforcement by NERC and its regional entities, subject to Commission oversight. The Commission may approve or remand a reliability standard based on statutory criteria, but cannot write or modify the standard itself. Instead, it may direct NERC to develop new or revised standards to address identified reliability gaps.

Reliability today is shaped by factors that test resilience. Those include rapid load growth from large loads, such as data centers, a more diverse resource mix that requires accurate modeling and consistent performance expectations, and the increasing frequency of extreme weather events. On top of this is the ever-present and constantly evolving threat landscape related to cybersecurity and physical security. Protecting the grid from malicious actors, whether through cyber intrusions, physical attacks on critical facilities, or exploitations in the supply chain, remains fundamental to maintaining reliability. The Commission has taken extensive actions over the years to ensure reliability. Since adopting the critical infrastructure standards in 2008, it has expanded protections against cyber and physical threats, including supply chain risks, network monitoring, and incident response. To address extreme weather, the Commission approved new standards, directed improvements to cold weather preparedness, and required vulnerability assessments. It also directed NERC to develop new standards for inverter-based resources, which the Commission has since approved.

Currently, the Commission is closely following the emergence of large loads. This includes ongoing NERC activity to identify and register large loads for compliance with reliability standards and develop new reliability standards that address their associated reliability risks. Once completed, NERC will submit their reliability

standards for Commission review and approval. The Commission's core mission, as Chairman Swett emphasizes, is to ensure reliable, secure, and affordable energy. Her focus on regulatory certainty is essential for timely infrastructure investment and for enabling large loads to connect to the grid predictably, while maintaining reliability is reflected in the work that is highlighted today. The legislation under consideration reflects these challenges, highlighting the need for clear planning processes, accurate risk assessments, timely infrastructure development, and strong coordination across stakeholders. The Commission remains committed to working with Congress, NERC, and industry to uphold a reliable, resilient, and secure bulk power system.

Thank you, and I look forward to your questions.

[The prepared statement of Mr. Ayoub follows:]

CUI

Written Testimony of Kal Ayoub
Director, Office of Electric Reliability
Federal Energy Regulatory Commission
before the
Committee on Energy and Natural Resources
Subcommittee on Energy
United States Senate
April 15, 2026

Introduction

Chairman McCormick, Ranking Member Gallego, and Members of the Subcommittee, thank you for the opportunity to testify today. My name is Kal Ayoub, and I am the Director of the Office of Electric Reliability (OER) of the Federal Energy Regulatory Commission (FERC or the Commission). OER is responsible for taking a lead role in carrying out the Commission's responsibilities in protecting, improving, and overseeing the reliability and security of the nation's Bulk-Power System through effective regulatory oversight as established in the Energy Policy Act of 2005.

I am here today as a Commission staff witness and my remarks do not necessarily represent the views of the Commission or any individual Commissioner. My testimony summarizes the Commission's oversight of the reliability of the Bulk-Power System and recent Commission activity implementing that authority.

FERC's Reliability Authority

In the Energy Policy Act of 2005, Congress amended the Federal Power Act to add section 215 pertaining to Bulk-Power System reliability. Through this provision, Congress tasked the Commission with responsibility to oversee mandatory, enforceable reliability standards for the Nation's Bulk-Power System. This authority pertains to the interconnected electric power system (the "grid") in the United States, and excludes Alaska, Hawaii, and local distribution systems. The Bulk-Power System also includes the electric energy needed to maintain transmission system reliability.

Section 215 of the Federal Power Act requires the Commission to certify an Electric Reliability Organization (ERO) that is responsible for proposing, for Commission review and approval, reliability standards to help protect and improve the reliability of the Nation's Bulk-Power System. The Commission certified as the ERO the North American Electric Reliability Corporation (NERC). The reliability standards apply to the users, owners and operators of the Bulk-Power System and become mandatory in the United States only after Commission approval. NERC and its six Regional Entities enforce the reliability standards and may impose penalties for noncompliance, after notice and opportunity for hearing, subject to review and

approval by the Commission. The Commission may also enforce reliability standards independently of NERC.

The Commission may approve proposed reliability standards or modifications to the standards if it finds them to be "just, reasonable, not unduly discriminatory or preferential, and in the public interest." If the Commission disapproves of a proposed standard or modification, section 215 requires the Commission to remand it to the ERO for further consideration. The Commission does not have the authority to modify or author a reliability standard. Rather, on its own motion or upon complaint, the Commission may direct the ERO to develop and submit for Commission approval a new or modified reliability standard on a specific matter to address a reliability gap.

Reliability Landscape

Today, reliability is being shaped by several major factors.

First, rapid load growth, particularly from large, concentrated loads such as data centers and advanced manufacturing, is occurring at a speed and scale that challenge traditional planning processes. Simply put, data centers can be built much faster than needed generation and transmission can be added to serve them.

Second, the resource fleet is becoming more diverse, and, while all types of resources contribute to reliability, they do so in different ways. This means reliability now depends on accurately modeling how each resource type performs and ensuring they meet clear, consistent performance expectations to support reliability, both when the grid is operating normally and when conditions are challenging due to outages or unexpectedly high demand.

Third, extreme weather events are now common. These events test the resilience of the grid, highlighting the importance of preparedness, coordination, and infrastructure performance under stressed conditions.

Overlaying all of this is the ever-present and constantly evolving threat landscape related to cybersecurity and physical security. Protecting the grid from malicious actors, whether through cyber intrusions, physical attacks on critical facilities, or exploitation of vulnerabilities in supply chains, remains fundamental to maintaining reliability.

FERC Activity Pertaining to Bulk-Power System Reliability

The Commission has taken extensive actions over the years to ensure reliability.

Since establishing the Critical Infrastructure Protection reliability standards in 2008, the Commission has expanded requirements to safeguard against cyber and physical threats, including new rules on supply chain risk management, internal network security monitoring, and incident response. To prepare for increasingly severe weather events, the Commission approved new extreme weather reliability standards, directed further modifications to improve extreme cold weather preparedness and operations, and required transmission providers to assess vulnerabilities. The Commission also directed NERC to develop reliability standards that address reliability risks associated with the rapid growth of inverter-based resources, which include modern wind turbines, solar photovoltaic, and battery energy storage resources. As a result, NERC has submitted and the Commission has approved a series of new and modified reliability standards that address inverter-based resources.

Currently, the Commission is closely following emerging large load activity, including ongoing NERC activity to (1) identify and register large loads for compliance with reliability standards and (2) develop new reliability standards that address the reliability risks associated with large loads. Once completed, NERC will submit the large load-related reliability standards for Commission review and approval.

Conclusion

Chairman Swett regularly emphasizes that the Commission's core responsibility is to ensure reliable and secure energy at just and reasonable rates for consumers. She routinely underscores that regulatory certainty is foundational to achieving that goal, providing the clarity needed for timely investment in infrastructure and enabling the system to keep pace with rapidly growing demand. A key part of that clarity is making sure large loads can connect with the grid quickly and predictably, with processes that move at the pace these projects arrive while still maintaining reliability.

The legislation under consideration reflects many of these challenges, particularly with respect to infrastructure development, system planning, and maintaining reliability in the face of evolving demand and resource conditions. From a technical perspective, policies that support accurate risk assessments, clear planning processes, timely infrastructure development, and effective coordination across stakeholders are essential to maintaining reliability.

In closing, the reliability framework established by Congress has provided a strong foundation for maintaining the reliability and security of the Bulk-Power System. The Commission remains committed to working with Congress, NERC, and industry to ensure that the grid remains reliable, resilient, and secure.

Thank you, and I look forward to your questions.

Senator MCCORMICK. Thank you, Mr. Ayoub.

Senator Gallego, do you want to go ahead with your questions?

Senator GALLEGO. I will defer to Senator King, in case he wants to ask questions and head out since I will be here the whole time.

Senator King.

Senator KING. Thank you very much. Perhaps AI could do a better job of scheduling the Senate.

[Laughter.]

Senator KING. I have three hearings at the very same time this afternoon, so I appreciate that, both of you.

I just wanted to mention two bills that I think are particularly important. One is the Advancing GETs Act, which would basically not mandate grid-enhancing technologies, but provide an incentive to developers to counteract the current incentive, which is to build things in the old way. And Mr. Ayoub, my study indicates that GETs can really have a significant—up to 30 percent—increase in the throughput of the grid at a much lower cost than an entire rebuild. Is that your judgment?

Mr. AYOUB. Thank you for the question, Senator.

So, from a reliability perspective, grid-enhancing technologies provide tremendous value to the grid, such as reconductoring, optimization, and dynamic line ratings. So, from a reliability perspective, I think, any more electrons that we can get on the grid is a positive, specifically when there are short-term solutions in terms of building new transmission lines.

Senator KING. Well, one of the advantages is time.

Mr. AYOUB. Correct.

Senator KING. This is something that would be done almost immediately with no permitting and no delays. Secondly, it's much cheaper. And one of the problems that we face is that this gigantic expansion of the grid is going to be expensive. And we are now seeing transmission and distribution costs that exceed the cost of generating electricity. So, that's why I think this is an important initiative. And again, what it does is basically provide an incentive to the developer of the transmission.

The second bill is one that I am proud to co-sponsor with the Chairman, and that is the REWIRE Act, which is about conductors. This is a conventional conductor, and this is a carbon-based conductor.

[Photograph of the two conductors follows:]

Senator KING. As you can see, it's smaller and lighter. It will carry twice the electricity. And so, this is another way of significantly increasing the grid capacity without new poles, without new rights-of-way, without the huge expense. And the REWIRE Act, under the Chairman's leadership, would basically say, you don't have to go through a long permitting process because there's no environmental impact of this, except for the good, but it's also a way of considerably cutting the cost of the expansion that we all agree is necessary. So, you mentioned reconductoring. Expand on that—and you are welcome to say that I am right.

[Laughter.]

Mr. AYOUB. Senator King, thank you for the question. I would agree that grid-enhancing technologies, which include reconductoring, provide tremendous value because, as you mention, they are improvements to existing lines on existing rights-of-way. Imagine having a two-lane road, and you are getting congestion over the years, and you ask yourself, rather than build a new highway, which is important, can we expand that two-lane road to a four-lane road temporarily until we address the other issue? So, absolutely, it's all of the above. From a reliability standpoint, I will always say getting electrons through the transmission lines is a positive for all of us.

Senator KING. But I do think that we have to be thinking about cost because electric rates are already going up and are too high in many regions of the country—in New England. And the expansion of the grid, if we don't watch it, is going to substantially increase. I remember the day when T&D was 30 percent of the bill. Now it's over 50 percent, approaching 60 percent, and it's going to be even more than that unless we adopt the technologies that will enable us to do this expansion without burdening the ratepayers. And that's your mission at FERC, is it not?

Mr. MORENOFF. Senator, thank you. Yes, I agree entirely. The Commission's mission is to ensure just and reasonable rates for consumers, and that goes directly to the issues that you have raised.

Senator KING. Thank you.

Thank you, Mr. Chairman. I appreciate it. I appreciate your allowing me to go forward.

Senator MCCORMICK. Senator Padilla.

Senator PADILLA. Thank you, Mr. Chairman. Likewise, I appreciate the accommodation, the flexibility, I appreciate you and the Ranking Member calling for today's hearing and want to register my support for two of the bills included in this hearing today—Senator King's Advancing GETs Act, and of course, Mr. Chairman, your REWIRE Act. Now, these bills, I think, take crucial steps toward modernizing our grid—which is needed, and in many places overdue—with the advanced transmission conductors and grid-enhancing technologies that Senator King and I talk so frequently about. As you can tell, he is a big fan. They also represent key pieces of what needs to be done to build out a reliable transmission system in this country, particularly as the population grows, our economy grows, and the need for electrons continues to grow.

But separately, I wanted to highlight the discussion draft on transmission that I, along with four of my colleagues on this Com-

mittee, have been circulating to address the transmission system more holistically. The package includes provisions from both of the bills on the agenda today, and I want to thank the Chair, again, for his focus on this topic.

Now, getting to my first question, Mr. Ayoub, I know you have been responding to Senator King's questions about the benefits of these new technologies. I wanted to hear from Mr. Morenoff on any identified barriers from a legal and/or administrative perspective to the deployment of reconductoring or grid-enhancing technologies at scale, right? If we are convinced this is the direction to go, how do we go as quickly as possible? What needs to change to let us do so?

Mr. MORENOFF. Senator, thank you for that question. I think it's currently less an issue of legal barriers and more about, as Senator King was saying, establishing proper incentives because there may be reasons why individual utilities in a particular situation may choose to make a different investment rather than utilizing a grid-enhancing technology. And I think that some of the bills on today's agenda seek to address that challenge, to say, are there more incentives that we can provide to try to make those technologies more appealing, and therefore be able to provide those benefits to ratepayers?

Senator PADILLA. Okay.

And what specifically may come from Congress/the federal level versus what states may provide, or in rate cases that utilities have to go through to be able to, again, take these leaps forward?

Mr. MORENOFF. Thank you, Senator. That's true that many utilities would have matters both before FERC as well as before the commission at the state level. I suspect that there is a common interest across those levels— certainly the case at FERC, and I know here at the Committee—on doing everything we can to ensure that rates are just and reasonable. And if this is one of the steps that we can take to promote that result, hopefully the incentives that we are discussing can drive more effort in that direction, as well as in the type of new investment we need.

Senator PADILLA. Okay.

Moving on to a related topic, FERC spent the last five years working to accelerate generator interconnection queues through its work on Order No. 2023. I know you are both very familiar with that. I see the heads nodding. In the last year, FERC also approved regional-specific accelerated programs to get new generation connected to the grid quickly. All of these programs included battery storage. I know this is a Subcommittee. I will repeat it at the next opportunity for the full Committee. I think the Chairman would appreciate hearing this. All of these programs included battery storage. All were fuel-neutral and all prioritized projects that are commercially available and ready to break ground.

Mr. Morenoff, is further action to reorder interconnection queues really going to help move the ball forward when so much has already been accomplished?

Mr. MORENOFF. Senator, thank you. As you noted, the Commission has taken many steps in recent years to accelerate interconnection, both with respect to establishing generic rules for all jurisdictional transmission providers in Order No. 2023, as well as

in responding to the individual filings we have received from individual regions highlighting their needs. Whether there are additional steps to prioritize additional types of resources, we would, of course, defer to Congress and be available to implement whatever Congress may determine is appropriate.

Senator PADILLA. Yes, obviously, the concern would be when we get to be too prescriptive on the types of projects and we are no longer neutral on that front, that could undermine the implementation of work that has been underway already and moving us in the right direction. So, thank you for your participation today.

Senator MCCORMICK. Senator Gallego.

Senator GALLEGO. Thank you, Chairman.

It took the Commission more than two years to issue its landmark interconnection order, Order No. 2023. Conversely, the GRID Power Act would require final regulations issued on the bill within 180 days of enactment. Could you explain how the Commission could benefit from having more than six months to implement this type of rule?

Mr. MORENOFF. Thank you, Senator, for that question.

As you noted, large-scale rulemakings, like the Commission's Order No. 2023, involve a series of steps, usually including at least the issuance of a notice of proposed rulemaking. We often then receive extensive comments back, which we take seriously in developing anything that would be a final rule. It has been the case, typically, that we have needed longer than that six-month period in order to reach a final rule. We also recognize the importance of the types of issues that are being addressed, and that when Congress sets a timeline, FERC takes those timelines very seriously and has a very good track record of meeting the deadlines that Congress establishes.

Senator GALLEGO. And then, Mr. Ayoub, does FERC currently have the expertise and data to review proposed agency actions for reliability concerns? And how helpful is it to have NERC's expertise as part of the reliability assessment process?

Mr. AYOUB. Thank you, Senator.

As the Director of the Office of Electric Reliability, of course, we do have expertise, and our priorities right now are focused on managing reliability as a resource amidst changes, responding to extreme weather, and protecting the grid from physical and cyber-attacks. In terms of cross-agency expertise, I think I would, if it's okay with you, Senator, I may defer to Mr. Morenoff, the Deputy General Counsel.

Mr. MORENOFF. Thank you.

Both with respect to our interaction with other agencies and our interaction with NERC, for some of the depth of studies, it is particularly beneficial to have that type of draw on the expertise, and in particular, the computing power that may be available. Some of the studies that were described in the bill that you are referencing, we believe that NERC would have the capability of doing, and perhaps the national labs would have the capability of doing. FERC would very much benefit from that information, but would not currently have the capability of doing those studies ourselves.

Senator GALLEGO. Okay.

Mr. Morenoff, FERC's Chairman is named by the President, potentially inputting a more political process into these grid reliability determinations, as FERC approval appears necessary for certain agency actions to become final. Members of both parties have spoken about the importance of consistency in permitting across agencies for the stability of both the grid and private business. Would adding the risk of more political process hurt certainty and stability for the grid?

Mr. MORENOFF. Thank you, Senator.

I would agree that the more certainty that we can provide with respect to permitting—and in fact, Chairman Swett has spoken more generally about the benefits of providing greater regulatory certainty at a time when investment is so greatly needed.

Senator GALLEGO. Mr. Ayoub, turning back to the GRID Power Act, can you explain whether prioritizing certain forms of generation over others could impact grid reliability or energy affordability in the long run?

Mr. AYOUB. Thank you, Senator.

Again, as the Director of the Office of Electric Reliability, focusing strictly on cyber and physical security, inverter-based resources, extreme weather, I just want to clarify, Senator, is your question specific to generator interconnection reform?

Senator GALLEGO. No, prioritizing certain forms of generation to incent in terms of generation when it comes to renewables versus carbon-based versus nuclear, you know, in terms of, I believe personally that the government should be agnostic about it, right? Try to figure out how to get as many electrons on the grid as fast as possible and move them from everywhere. And I want to hear your assertion whether you agree that there should be an agnostic approach to power generation.

Mr. AYOUB. Thank you for the clarification, Senator. Absolutely, the Commission is technology-neutral, has always been, and the Commission doesn't pick winners or losers or which specific technologies should be considered under any act.

Senator GALLEGO. Okay, and the reason I bring that up is because we have seen this administration decide that carbon-based energy is quote/unquote "better" than renewables, and I think at some point, you know, when it comes to being able to generate and then move it, sometimes it might actually be better and cheaper for us to be using renewables, and sometimes it is good to use carbon. And I would be fine for that, too, but I want to make sure that it's being decided on an agnostic basis. That is going to be the most important thing, I think, to bring down the cost for the consumer.

And I yield back.

Senator MCCORMICK. Thank you.

Mr. Morenoff, let me begin by asking about the REWIRE Act that we talked about a few minutes ago. As we know, reconductoring allows us to increase capacity using the existing transmission lines or rights-of-way. Based on FERC's experience, how much additional capacity can reconductoring make available on the existing system, and to what extent are existing utilities already using this approach?

Mr. MORENOFF. Thank you, Senator. I can talk about that broadly and then my colleague, Mr. Ayoub, may have some additional, more technical thoughts.

Senator MCCORMICK. Great.

Mr. MORENOFF. But I think the observation is correct that there is great potential from the application of reconductoring and other advanced technologies in order to get more out of our existing system. Although I don't have a particular percentage in mind, I do think that we have seen, as some utilities have started to take steps——

Senator MCCORMICK. But rare, or common at this point?

Mr. MORENOFF. I don't have a number to offer, I'm sorry.

Senator MCCORMICK. Okay.

Mr. Ayoub.

Mr. AYOUB. Thank you, Senator.

I don't have a percentage of how many utilities are adopting them, but I know they are becoming more popular amongst—for the obvious reason, Senator, where we are pushing more electrons through the transmission lines without building new lines.

Senator MCCORMICK. Great.

And this question goes to both of you, I think. We are seeing renewed growth, as I mentioned in my opening statement, across a number of sectors in terms of electricity demand. How is FERC assessing the implications of that growth for grid reliability, and what trends are you seeing in the interconnection queue today?

Mr. AYOUB. I can speak from the reliability side and I will turn it over to my colleague.

Senator MCCORMICK. Great.

Mr. AYOUB. So, thank you, Senator, for the question.

We work, as you are aware, with NERC—the North American Electric Reliability Corporation—which issues a long-term reliability assessment every year that looks ten years ahead and sort of looks at the entire continent, and through that assessment, really looks at where there are generation deficiencies, transmission issues, and they come up with a map every year as a snapshot. So, we work very closely with NERC as we are looking at the long-term reliability assessment, and through that, before my colleague picks up, the Commission has approved some processes, for which Mr. Morenoff would go into detail, but from our standpoint, working with NERC, we do identify through studies, et cetera, where those reliability gaps are.

Mr. MORENOFF. Thank you, Senator.

And with respect to interconnection, in particular, I think that the slow pace of interconnections, which sometimes takes seven or eight years for a proposed project to move through the interconnection queue, always was a problem for drawing the investment that was needed. As the pace of load growth has increased so dramatically, that has become not just a frustration, but a really dramatic problem in terms of having the adequate generation resources available. I think the Commission's actions over the past several years reflect several steps to address that, both in terms of establishing more effective baseline rules through Order No. 2023, and then also, recognizing that individual regions face different challenges. And looking at the proposals they have brought to FERC

to say, what are the resources they need, what are those resources' characteristics, and trying to look for ways in the short term to further expedite the processing of those generating resources.

One other observation in that respect is that, above and beyond what the Commission has already improved, there are some transmission providers that are also looking for ways to adopt other advanced technologies into their interconnection queue processing. And there seems to be great potential to further expedite that processing through the use of those technologies.

Senator MCCORMICK. Very good. Thank you.

Mr. Ayoub, I want to ask you about the legislation I introduced with Senator Coons, the Liquid Cooling for AI Act. As we know, data centers are crucial to winning the AI race with China. Data centers' annual energy use could grow from 4.4 percent of the country's total annual electricity consumption to 12 percent by 2028, just around the corner. What changes has FERC observed in the scale and pace of large-load interconnection requests, and is the current system keeping pace with that demand, or do you see strains emerging?

Mr. AYOUB. Thank you for your question, Senator.

So, I will start with you first, with the legislation. I understand it's directed at the DOE, but I did want to comment that while the Commission is technology-neutral, any technology that can lower the consumption and use from data centers would be a good thing for the grid. In terms of large-load connections and application to the Commission, as my colleague Mr. Morenoff has said, you know, there have been some orders that the Commission has issued, specifically the show cause orders, but I can turn it over to Mr. Morenoff for details on the orders themselves. I want to make sure I am careful with what is ex parte and what is not yet.

Mr. MORENOFF. Thank you, Senator.

The Commission has already taken some steps, recognizing that the issues about exactly what will be FERC-jurisdictional and what will be state-jurisdictional are not entirely clear. But the Commission has taken actions within our jurisdiction to ensure that there is greater clarity about the rules as to at least the context of large loads and the context of co-location with generation. And I think that clarity will help to provide greater investment incentives as well.

Senator MCCORMICK. Very good.

Gentlemen, is there anything either of you would like to offer in addition to the questions you were asked or your initial statements?

Mr. MORENOFF. Senator, just, again, to thank you for the opportunity and for the leadership that this Committee is demonstrating on these really important issues. FERC very much values the opportunity to be part of that continuing discussion with you and with the Committee.

Senator MCCORMICK. Okay.

Senator Gallego, do you have any more questions or anything?

Mr. AYOUB. And I will say thank you so much, Senator. It is a privilege to be here. My family is here with me to come watch. And in terms of offering our office, I am sure I speak for David as well, always available for technical assistance on future bills as well.

Senator GALLEGO. Thank you for your time.

Senator MCCORMICK. Yes, very good.

I just want to thank you both, thank you to your families for being here to support you. I want to recognize each member in attendance and have them noted by the clerk. And I really want to thank you for coming. We are trying to get a lot done in this area, and your expertise is very helpful.

Official questions for the record—I don't think we had any questions for the record—but those questions are due by 6:00 p.m. today. Statements for the official record are due on Wednesday, April 22, 2026.

And with that, the hearing is adjourned. Thank you.

[Whereupon, at 3:22 p.m., the hearing was adjourned.]

APPENDIX MATERIAL SUBMITTED

CUI

U.S. Senate Committee on Energy and Natural Resources
April 15, 2026 Hearing: *Energy Subcommittee Hearing to Receive Testimony on Pending Legislation*
Questions for the Record Submitted to Mr. Morenoff

Questions from Senator Catherine Cortez Masto

Question 1: As mentioned during the hearing, generation interconnection queues across the country continue to face backlogs, preventing the connection of new energy resources needed to meet growing power demand. In fact, a 2025 report from Lawrence Berkeley National Lab determined that nearly 2,300 gigawatts (GW) of generation and storage capacity were held up in interconnection queues across the country at the end of 2024.

Is there any reason why we shouldn't accelerate the interconnection of all generation resources to meet growing demand?

A: The Commission unanimously issued Order No. 2023 to address via generic rulemaking obstacles to the efficient interconnection of new generation resources. The Commission now has acted on filings made by all jurisdictional transmission providers in compliance with Order No. 2023. This implementation of the reforms required by Order No. 2023 is accelerating the interconnection of generation resources across the country.

How does the Commission factor in regional considerations and constraints? Further, is FERC supportive of new technologies – such as advanced computing – to optimize today's review and study processes?

A: The Commission accounts for differences among regions of the country in its evaluation of both transmission providers' respective filings in compliance with Order No. 2023 and filings from individual transmission providers that go above and beyond the requirements of Order No. 2023. For example, in the past several years, the Commission has approved proposals from each of the California Independent System Operator, PJM Interconnection, the Midcontinent Independent System Operator, and the Southwest Power Pool to expedite interconnection for generation resources that are more likely to be constructed and that will meet those regions' respective needs. The Commission and individual Commissioners also continue to encourage transmission providers to look for further ways to increase the efficiency of their interconnection processes, including through application of advanced computing technologies.

CUI

U.S. Senate Committee on Energy and Natural Resources
April 15, 2026 Hearing: *Energy Subcommittee Hearing to Receive Testimony on Pending Legislation*
Questions for the Record Submitted to Mr. Morenoff

Can you please expand on your written testimony regarding certain regions of the country that you believe are taking an innovative queue management approach for interconnection to process requests faster? Can you summarize some of the benefits that FERC Order Number 2023 has had to reduce interconnection backlogs?

A: *To reduce interconnection backlogs, Order No. 2023 is increasing efficiency by requiring transmission providers to conduct interconnection studies encompassing numerous proposed generating facilities, rather than separate studies for each individual generating facility. Order No. 2023 also establishes deadlines for transmission providers to complete interconnection studies, as well as penalties for where transmission providers fail to complete those studies on time. In addition, Order No. 2023 establishes requirements, including financial deposits and site control conditions, for interconnection customers to enter and remain in the interconnection queue.*

In addition to the above-mentioned proposals focused on expediting interconnection of generation resources, the Commission has approved innovative proposals from grid operators to expedite interconnection of large-load additions and associated generation in a manner that accommodates the unique operational demands of large loads while also facilitating reliable interconnection and protecting other transmission customers. One example of such a proposal is the Southwest Power Pool's proposed processes for High Impact Large Loads and associated generation through the Hill Impact Large Load Generation Assessment, which the Commission approved in January 2026.

U.S. Senate Committee on Energy and Natural Resources
April 15, 2026 Hearing: *Energy Subcommittee Hearing to Receive Testimony on Pending Legislation*
Questions for the Record Submitted to Mr. Ayoub

Questions from Senator Cortez Masto

Question 1: As mentioned during the hearing, generation interconnection queues across the country continue to face backlogs, preventing the connection of new energy resources needed to meet growing power demand. In fact, a 2025 report from Lawrence Berkeley National Lab determined that nearly 2,300 gigawatts (GW) of generation and storage capacity were held up in interconnection queues across the country at the end of 2024.

Is there any reason why we shouldn't accelerate the interconnection of all generation resources to meet growing demand?

A: As noted in the Questions For the Record responses provided by the Commission's Deputy General Counsel, David Morenoff, the Commission unanimously issued Order No. 2023 to address via generic rulemaking obstacles to the efficient interconnection of new generation resources. The Commission now has acted on filings made by all jurisdictional transmission providers in compliance with Order No. 2023. This implementation of the reforms required by Order No. 2023 is accelerating the interconnection of generation resources across the country.

How does the Commission factor in regional considerations and constraints? Further, is FERC supportive of new technologies – such as advanced computing – to optimize today's review and study processes?

A: As noted in the Morenoff responses, the Commission accounts for differences among regions of the country in its evaluation of both transmission providers' respective filings in compliance with Order No. 2023 and filings from individual transmission providers that go above and beyond the requirements of Order No. 2023. For example, in the past several years, the Commission has approved proposals from each of the California Independent System Operator, PJM Interconnection, the Midcontinent Independent System Operator, and the Southwest Power Pool to expedite interconnection for generation resources that are more likely to be constructed and that will meet those regions' respective needs. The Commission and individual Commissioners also continue to encourage transmission providers to look for further ways to increase the efficiency of their interconnection processes, including through application of advanced computing technologies.

Can you please expand on your written testimony regarding certain regions of the country that you believe are taking an innovative queue management approach for interconnection to process requests faster? Can you summarize some of the benefits that FERC Order Number 2023 has had to reduce interconnection backlogs?

A: As noted in the Morenoff responses, to reduce interconnection backlogs, Order No. 2023 is increasing efficiency by requiring transmission providers to conduct interconnection studies encompassing numerous proposed generating facilities, rather than separate

U.S. Senate Committee on Energy and Natural Resources
April 15, 2026 Hearing: *Energy Subcommittee Hearing to Receive Testimony on Pending Legislation*
Questions for the Record Submitted to Mr. Ayoub

studies for each individual generating facility. Order No. 2023 also establishes deadlines for transmission providers to complete interconnection studies, as well as penalties for where transmission providers fail to complete those studies on time. In addition, Order No. 2023 establishes requirements, including financial deposits and site control conditions, for interconnection customers to enter and remain in the interconnection queue.

In addition to the above-mentioned proposals focused on expediting interconnection of generation resources, the Commission has approved innovative proposals from grid operators to expedite interconnection of large-load additions and associated generation in a manner that accommodates the unique operational demands of large loads while also facilitating reliable interconnection and protecting other transmission customers. One example of such a proposal is the Southwest Power Pool's proposed processes for High Impact Large Loads and associated generation through the Hill Impact Large Load Generation Assessment, which the Commission approved in January 2026.

Question 2: Your written testimony noted some of the reliability challenges facing the grid today, including rapid load growth, extreme weather events, as well as cyber and physical attacks.

How is FERC working with public and private stakeholders to tackle these challenges?

A: The Commission works closely with public and private stakeholders to address today's reliability challenges, including rapid load growth, an evolving resource mix, extreme weather events, and rising cyber and physical security risks. We coordinate with the North American Electric Reliability Corporation (NERC), federal and state agencies, electric utilities of all types, and industry partners to identify vulnerabilities early and to develop solutions that strengthen the Bulk-Power System. Commission staff conducts outreach meetings with individual stakeholders and hosts or participates in technical conferences, as well as other public forums such as National Association of Regulatory Utility Commissioners (NARUC) conferences, to better understand reliability challenges and develop potential solutions.

The Commission also works collaboratively with NERC and its Regional Entities on reviews of the performance of the grid during winter storms. The goal of these performance reviews is to understand actions the electric and natural gas industry are taking to maintain reliability during extreme cold weather events and to seek improvements to cold weather operations during future winter storms. For example, in response to Winter Storm Uri in 2021 and Winter Storm Elliott in 2022, the Commission approved several extreme cold weather reliability standards proposed by NERC that set requirements for creating emergency plans for extreme cold events and winterization of generators.

U.S. Senate Committee on Energy and Natural Resources
April 15, 2026 Hearing: *Energy Subcommittee Hearing to Receive Testimony on Pending Legislation*
Questions for the Record Submitted to Mr. Ayoub

The Commission also works collaboratively with NERC through its oversight of cybersecurity standards development, compliance, and enforcement. For example, the Commission has convened technical conferences and workshops that have included NERC, its Regional Entities, and private stakeholders to inform standard development. The Commission will also continue to independently conduct nonpublic cybersecurity compliance audits, enabling the Commission to gain direct insight into future industry implementation of cybersecurity reliability standards and to proactively evaluate whether cyber risk mitigation measures remain sufficient as threats evolve.

Can you elaborate on recent standards the Commission has developed – such as supply chain risk management mechanisms and extreme weather reliability standards? Are there any additional standards that the Commission is currently considering to bolster grid protections?

A: *The Commission has taken significant actions to advance cybersecurity and supply chain management in recent years. For example, in June 2025, the Commission approved a reliability standard that requires electric grid stakeholders to implement internal network security monitoring to increase visibility and improve early attack detection in computer network traffic. In September 2025, the Commission directed NERC to enhance the existing supply chain risk management reliability standards so that electric grid stakeholders better identify and respond to supply chain risks. In March 2026, the Commission approved a reliability standard that mitigates the risks posed by a coordinated attack utilizing distributed "low impact" cyber systems. Also in March 2026, the Commission approved reliability standards that allow electric grid entities to adopt virtualization technologies without compromising the security of the nation's Bulk-Power System.*

The Commission has acted to strengthen system preparedness for extreme temperatures and winter storms. In February 2025, the Commission approved reliability standard TPL-008-1, which enhances long-term planning for extreme temperature events by requiring entities to conduct mandatory reliability assessments and to develop corrective action plans for identified system deficiencies. In September 2025, the Commission approved reliability standard EOP-012-3, which improves upon requirements for generator owners to implement freeze protection measures, create cold weather preparedness plans, and implement corrective actions when equipment freeze occurs during extreme cold weather.

The Commission has also updated reliability standards that reflect the increasing role of inverter-based resources (IBRs) such as wind and solar powered generation. In October 2023, the Commission directed NERC to develop standards addressing data sharing, modeling, and performance characteristics of IBRs. Over the past two years, NERC has

developed and the Commission has issued orders approving reliability standards pertaining to the modeling and reliable operations of IBRs.

With regard to reliability challenges currently under consideration, the Commission is working with NERC and stakeholders to understand and mitigate the reliability impacts of rapidly growing large loads, particularly computational loads (e.g., data centers and cryptocurrency miners). Related, the Commission is convening a software technical conference in July 2026 to discuss load forecasting as it relates to large load integration.

The Commission remains committed to continually strengthening the reliability and security of the Bulk-Power System as risks evolve.

DIGITAL POWER NETWORK

April 26, 2026

Via Email

The Honorable Dave McCormick
Chairman, Subcommittee on Energy
Senate Committee on Energy & Natural Resources

The Honorable Ruben Gallego
Ranking Member, Subcommittee on Energy
Senate Committee on Energy & Natural Resources

Re: Subcommittee on Energy to Receive Testimony on Pending Legislation (4/15/2026)

Dear Chairman McCormick, Ranking Member Gallego, and Members of the Subcommittee:

Thank you for the opportunity to submit this statement for the record. The Digital Power Network (DPN) is the largest coalition of Bitcoin miners and digital infrastructure providers – businesses that make substantial, long-term capital investments in the U.S. that both rely on and enhance the nation's electric grid.

DPN commends the Subcommittee for considering proposals to modernize our power infrastructure. Significant load growth, driven by data centers, advanced manufacturing, and broader electrification, is exposing constraints that have made it essential to optimize current grid utilization and interconnect new generation resources.[1]

The bills under consideration represent important steps toward increasing transmission capacity, reducing permitting timelines, strengthening reliability frameworks, and integrating flexible loads into long-term planning and market design. **As the Subcommittee evaluates the merits of these proposals, DPN urges members to recognize Bitcoin mining as a flexible data center load that enhances system reliability and strengthens domestic energy and compute resilience.**

Unlike many industrial activities, Bitcoin mining operations are highly price-sensitive and interruptible, offering virtually instantaneous demand response. Hashing – the

[1] https://www.eei.org/-/media/Project/EEI/Documents/Resources-and-Media/Fact-Sheet-Energy-Dominance.pdf

DIGITAL POWER NETWORK

computational process by which miners secure and verify transactions – can be leveraged to create additional headroom on the grid and optimize power utilization precisely when it is needed most. During Winter Storm Fern, for example, Bitcoin miners curtailed approximately 4,100 megawatts in one day to provide relief in Texas during a period of tightening energy supply and extreme price volatility.[2]

Such flexible grid usage stands to reduce consumer prices. According to new analysis from the Brattle Group, "improving system utilization by 10% could reduce electricity rates by roughly 3.4%" and, scaled to projected national load growth, could reduce electricity bills by $110-170 billion over the next decade.[3]

Conversely, flexible demand enables miners to optimize consumption using energy that would otherwise go to waste. By converting stranded assets into Bitcoin, miners can help reduce emissions from natural gas production and improve project economics for renewable energy developers awaiting grid interconnection or during periods of excess supply.

Ultimately, modernizing the electricity system to meet growing demand while maintaining affordability and reliability will be contingent on streamlining the permitting process for transmission upgrades and new infrastructure and fully leveraging flexible demand. DPN appreciates the Subcommittee's work on these issues and is prepared to support further efforts to strengthen the nation's power grid.

Sincerely,

Smythe Anderson
Executive Director
The Digital Power Network
smythe@digitalpowernetwork.com

[2] https://www.ercot.com/files/docs/2026/02/04/9.3-System-Operations-Update-REVISED.pdf
[3] https://www.brattle.com/insights-events/news/new-brattle-report-finds-better-utilization-of-existing-power-grid-could-save-us-consumers-more-than-100-billion-in-the-next-decade/