Grid Security Now!
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Senator John Cornyn
5001 Spring Valley Road
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Via U.S. Mail and Email: Dallas_office@cornyn.senate.gov

Dear Senator Cornyn,

I am one of your constituents and an expert in electric grid security. I have appeared on 60 Minutes, CNN, NPR, Newsweek as well as a vast number of other media outlets.[1] I have studied the security of our electric grid (more accurately *the lack of security*) for over a decade.

There has been a great deal or recent press on the lack of security of the electric grid. With the recent grid attacks in North Carolina, Nevada, Oregon and Washington state, most people have been surprised to learn about the almost 1000 physical attacks against the electric grid in the last decade and the general lack of security that exists.

The U.S. government has been concerned about the cybersecurity of the critical electric infrastructure since at least 2003; the security of the electric grid from physical threats since at least 1981; geomagnetic disturbance (GMD) threats since at least 1989; and electromagnetic pulse (EMP) threats since at least 1972. Moreover, we continue to see the impacts of extreme weather on our critical electric infrastructure every year and supply chain threats grow daily. In other words, we have been talking about securing our critical electric infrastructure for over four decades from the very threats we still face today.

Yet, despite decades of government knowledge of all these threats, today there are virtually no requirements for the electric grid to protect itself from known hazards. but it is a fact that electric utility industry lobbyists have successfully torpedoed grid security within the self-regulatory framework.

In fact, there is no one federal agency that has authority over the entire electric grid. Literally, there is nobody in charge of electric grid security! This is shocking to most people. It continues to be shocking to me, even after a decade of research.

[1] See: https://michaelmabee.info/michael-mabee-in-the-press/

The electric utility industry likes to use the talking point that there is no "one size fits all" solution to grid security (and, therefore, we should just leave it to them). They repeat this mantra over and over and try to make the grid security problem sound as complex and expensive as they possibly can to thwart any attempt to impose a government security mandate.

The electric utility industry is wrong: there is a "one size fits all" answer on how to fix electric grid security.

How to fix electric grid security:

First, because we literally cannot survive without electricity, we need to make protection of the electric grid against known hazards a mandatory federal requirement. Presently, grid security is voluntary, not mandatory. Presently, 100% of the risk is on us - the ratepayers, the citizens. If our electric grid suffers blackouts caused by the industry's recalcitrance at defending against any of the above hazards, it's all of us who suffer. The burden of this risk must shift from us, to them. Attached is a draft “Grid Security Act” which I request you introduce and support.

Second, we need to protect employees who are in a position to see, correct and report grid reliability and security issues. Presently, it is completely legal under federal law for an electric grid utility to fire an employee who reports violations of, for example, NERC reliability or critical infrastructure protection (CIP) standards. Attached is a bi-partisan whistleblower protection provision proposed by Senator Chuck Grassley (R-IA) and Senator Edward Markey (D-MA) in 2020. The provision was derailed by COVID-19 and never brought to a vote. This would provide these protections to employees of the electric grid and needs to be reintroduced.

These two simple, but critical, items are a "one size fits all" answer. They need to apply to all 3,000+ entities that comprise the electric grid. They must apply to all parts of the electric grid: generation, transmission and distribution. These two provisions together, if enacted, would change the corporate culture of the electric utility industry and change the culture of the federal government. They would establish a baseline federal mandate and jurisdiction to protect the electric grid.

I request that you introduce and champion these two provisions so we can protect our most critical of critical infrastructures – the electric grid.

Sincerely,

Michael Mabee

Electric Grid Security Act

(a) DEFINITIONS:
  (1) ELECTRIC GRID. – The term 'electric grid' means – all aspects of the generation, transmission, and distribution of electricity, both interstate or intrastate and both public or private sector.
  (2) SECRETARY. – The term 'Secretary' means the Secretary of Homeland Security.

(b) POLICY: Because the electric grid is critical to the national security and economy of the U.S., it is the responsibility of each owner or operator of any portion of the electric grid to take reasonably prudent measures to protect its portion of the electric grid against known hazards, including:
  (1) Physical attack
  (2) Cyber security
  (3) Geomagnetic disturbance
  (4) Electromagnetic pulse
  (5) Supply chain risk
  (6) Extreme weather
  (7) Any future threat designated by the Secretary.

(c) REGULATIONS REQUIRED: The Secretary shall, by rule, require, that for each entity in the electric grid, the principal executive officer or officers, or persons performing similar functions, certify annually that—
  (1) It is the responsibility of management to take reasonably prudent measures to protect its portion of the electric grid against known hazards
  (2) the signing officer has reviewed the entity's actions to protect against known hazards in Section (b);
  (3) based on the officer's knowledge, the entity has taken reasonably prudent measures to protect its portion of the electric grid against known hazards in Section (b);

(d) CRIMINAL AND CIVIL PENALTIES:
  a. Certifications pursuant to Section (c) are subject to 18 U.S.C. 1001.
  b. Any person alleging damage related to a false certification under Section (c) may file a civil action in the appropriate district court.

organizations, public utility commissions, and public service companies), and businesses that sell motor vehicles through the websites of the Department of Transportation and the Department of Energy, social media, and other methods—

(A) to provide the resource guide under paragraph (1) to interested stakeholders, including relevant consumer groups and transportation-related organizations;

(B) to promote the use of electric vehicles in both government and industry fleets; and

(C) to educate individuals involved in the sale of motor vehicles about the benefits of electric vehicles.

(5) SUBSEQUENT RESOURCE GUIDES.—Not less frequently than every 2 years for the duration of the working group, the working group shall publish an update to the resource guide under paragraph (1), as appropriate based on technological innovation and subsequent information.

(6) ACCESSIBILITY.—The Secretaries shall each maintain the resource guide under paragraph (1) on a designated website, which may be an existing website, of each Secretary relating to electric vehicles.

(d) COORDINATION.—To the maximum extent practicable, the Secretaries and the working group shall carry out this section using all available existing resources, websites, and databases of Federal agencies, such as the Alternative Fuels Data Center, the Energy Efficient Mobility Systems program, and the Clean Cities Coalition Network.

(e) FUNDING.—The Secretaries shall carry out this section using existing funds made available to the Secretaries and not otherwise obligated, of which—

(1) 50 percent shall be from funds made available to the Secretary of Transportation; and

(2) 50 percent shall be from funds made available to the Secretary of Energy.

(f) TERMINATION.—The working group shall terminate on the date on which the third report under subsection (b) is submitted.

SA 1426. Mr. CASEY submitted an amendment intended to be proposed by him to the bill S. 2657, to support innovation in advanced geothermal research and development, and for other purposes; which was ordered to lie on the table; as follows:

In section 2212(a), strike paragraph (1) and insert the following:

(1) HYBRID MICRO-GRID SYSTEM.—The term ''hybrid micro-grid system'' means a micro-grid system that—

(A) comprises generation from both conventional and renewable energy resources; and

(B) may use grid-scale energy storage.

In section 2212(a), strike paragraph (3) and insert the following:

(3) MICRO-GRID SYSTEM.—The term ''micro-grid system'' means a localized grid that operates autonomously, regardless of whether the grid can operate in connection with another grid.

In section 2212, add at the end the following:

(e) MUNICIPAL MICRO-GRID SYSTEMS.—

(1) REPORT.—Not later than 270 days after the date of enactment of this Act, the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives a report on the benefits of, and barriers to, implementing resilient micro-grid systems that are—

(A)(i) owned or operated by isolated communities or municipal governments; or

(ii) operated on behalf of municipal governments; and

(B) designed to maximize the use of—

(i) energy-generation facilities owned or operated by isolated communities; or

(ii) municipal energy-generation facilities.

(2) GRANTS TO OVERCOME BARRIERS.—The Secretary shall award grants of not more than $500,000 to not fewer than 10 municipal governments or isolated communities each year to assist those municipal governments and isolated communities in overcoming the barriers identified in the report under paragraph (1).

SA 1427. Mr. THUNE submitted an amendment intended to be proposed to amendment SA 1407 submitted by Ms. MURKOWSKI and intended to be proposed to the bill S. 2657, to support innovation in advanced geothermal research and development, and for other purposes; which was ordered to lie on the table; as follows:

At the appropriate place in subtitle H of title I, insert the following:

SEC. 180__. SENSE OF SENATE REGARDING FEDERAL POWER MARKETING ADMINISTRATIONS.

It is the sense of the Senate that—

(1) Federal electric transmission assets under the authority of the Southeastern Power Administration, the Southwestern Power Administration, the Western Area Power Administration, and the Bonneville Power Administration (referred to in this section as the ''Federal power marketing administrations'') should not be sold;

(2) the sale of Federal power marketing administration assets would result in utility rate increases for consumers;

(3) unobligated balances managed by the Federal power marketing administrations are a necessary financial resource that enable the Federal power marketing administrations to meet operation and maintenance needs and applicable purchase power and wheeling requirements;

(4) funds appropriated to the Federal power marketing administrations are repaid by customers of the Federal power marketing administrations; and

(5) the Congressional Budget Office should not score purchase power and wheeling activities carried out by the Federal power marketing administrations.

SA 1428. Mr. GRASSLEY (for himself and Mr. MARKEY) submitted an amendment intended to be proposed to amendment SA 1407 submitted by Ms. MURKOWSKI and intended to be proposed to the bill S. 2657, to support innovation in advanced geothermal research and development, and for other purposes; which was ordered to lie on the table; as follows:

At the end of part I of subtitle B of title II, add the following:

SEC. 220___. WHISTLEBLOWER PROTECTION FOR EMPLOYEES RESPONSIBLE FOR ENSURING THE RELIABILITY, RESILIENCE, AND SECURITY OF THE ELECTRIC GRID.

Section 215A of the Federal Power Act (16 U.S.C. 824o–1) is amended by adding at the end the following:

''(g) WHISTLEBLOWER PROTECTION.—

''(1) DEFINITIONS.—In this subsection:

''(A) ELECTRIC RELIABILITY ORGANIZATION; REGIONAL ENTITY; RELIABILITY STANDARD.—The terms 'Electric Reliability Organization', 'regional entity', and 'reliability standard' have the meanings given the terms in section 215(a).

''(B) ELECTRIC GRID.—The term 'electric grid' means—

''(i) all aspects of the generation, transmission, and distribution of electricity, whether interstate or intrastate; and

''(ii) the supply chain of equipment and software used in the generation, transmission, and distribution of electricity.

''(C) EMPLOYEE.—The term 'employee' means an individual who is an employee, former employee, contractor, subcontractor, grantee, or agent of an employer.

''(D) EMPLOYER.—

''(i) IN GENERAL.—The term 'employer' means an individual or entity in the public or private sector, including any Federal, State, or local government agency, that employs or retains the services of an individual who has access to—

''(I) critical electric infrastructure information or other information relating to critical electric infrastructure; or

''(II) other information relating to the reliability, resilience, or security of the electric grid.

''(ii) INCLUSIONS.—The term 'employer' includes an officer, employee, contractor, subcontractor, grantee, or agent of an individual or entity described in clause (i).

''(2) WHISTLEBLOWER PROTECTION FOR EMPLOYEES.—No employer may discharge, demote, suspend, threaten, blacklist, breach confidentiality, harass, or in any other manner discriminate against an employee with regard to the compensation, terms, conditions, or privileges of employment (including through an act in the ordinary course of the duties of the employee) because the employee or an individual associated with, or acting pursuant to a request of, the employee—

''(A) provided or caused to be provided information that the employee or individual associated with, or acting pursuant to the request of, the employee reasonably believed to evidence a violation of any provision of Federal or State law (including regulations) relating to fire safety or the protection or security of electric infrastructure (including critical electric infrastructure), critical electric infrastructure information, or other information relating to the reliability, resilience, or security of the electric grid, including a reliability standard, such as a Critical Infrastructure Protection standard, if that information is provided to—

''(i) the Commission;

''(ii) the Electric Reliability Organization;

''(iii) a regional entity;

''(iv) a Regional Transmission Organization;

''(v) an Independent System Operator;

''(vi) the Secretary;

''(vii) the Secretary of Homeland Security;

''(viii) the Attorney General;

''(ix) Congress;

''(x) a State regulatory authority or State inspector general;

''(xi) an individual with supervisory authority over the employee, including in communications that are part of the job duties of the employee; or

''(xii) any other individual working for the employer who the employee or associated or requested individual reasonably believes has the authority—

''(I) to investigate, discover, or terminate the misconduct; or

''(II) to take any other action to address the misconduct;

''(B) assisted in an investigation regarding the violation of any provision of Federal or State law described in subparagraph (A) if that assistance is provided to an individual or entity described in clauses (i) through (xii) of that subparagraph;

''(C) has filed or caused to be filed, or plans imminently (with the knowledge of the employer) to file or cause to be filed, a proceeding relating to any violation or alleged

violation of any provision of Federal or State law (including regulations) described in subparagraph (A); or

''(D) testified, participated, or otherwise assisted in an administrative or judicial action taken by the Commission, an Electric Reliability Organization, a regional entity, a State regulatory authority, or a State inspector general relating to an alleged violation of any provision of Federal or State law (including rules and regulations) relating to the protection, security, reliability, or resilience of electric infrastructure (including critical electric infrastructure), critical electric infrastructure information, or other information relating to the reliability, resilience, or security of the electric grid, including a reliability standard, such as a Critical Infrastructure Protection standard.

''(3) ENFORCEMENT ACTIONS.—

''(A) IN GENERAL.—An individual who alleges discharge or another violation of paragraph (2) by any person may seek relief by filing a complaint with the Secretary of Labor by not later than 180 days after the date on which the alleged violation occurs.

''(B) PROCEDURES.—An action under subparagraph (A) shall be governed under the rules and procedures described in section 42121(b) of title 49, United States Code, except that—

''(i) the notification required under paragraph (1) of that section shall be made to the person named in the complaint and to the employer; and

''(ii) with respect to the legal burdens of proof described in that section—

''(I) each reference to 'behavior described in paragraphs (1) through (4) of subsection (a)' contained in paragraph (2)(B) of that section shall be considered to be a reference to behavior described in subparagraphs (A) through (D) of paragraph (2) of this subsection; and

''(II) any reference to a 'violation of subsection (a)' contained in that section shall be considered to be a reference to a violation of paragraph (2) of this section.

''(C) ACTION BY SECRETARY.—

''(i) DEADLINE.—The Secretary of Labor shall act on a complaint filed under subparagraph (A) by the date that is 180 days after the date on which the complaint is filed.

''(ii) FAILURE TO ACT.—If the Secretary of Labor fails to act on a complaint filed by an individual who alleges discharge or another violation of paragraph (2), absent a sufficient demonstration that the failure to act is due to the bad faith of the individual, the individual who alleged the violation may file an action at law or equity for de novo review in a Federal district court of competent jurisdiction, in accordance with subparagraph (D).

''(D) ACTIONS FOR DE NOVO REVIEW.—

''(i) JURISDICTION.—The jurisdiction of a Federal district court over an action filed under subparagraph (C)(ii) shall be determined without regard to the amount in controversy.

''(ii) PROCEDURE.—

''(I) IN GENERAL.—An action under this subparagraph shall be governed under the rules and procedures described in section 42121(b) of title 49, United States Code, except that the notification required under paragraph (1) of that section shall be made to—

''(aa) the person named in the complaint; and

''(bb) the employer.

''(II) BURDENS OF PROOF.—An action under this subparagraph shall be governed by the legal burdens of proof described in section 42121(b) of title 49, United States Code, except that—

''(aa) each reference to 'behavior described in paragraphs (1) through (4) of subsection (a)' contained in paragraph (2)(B) of that section shall be considered to be a reference to behavior described in subparagraphs (A) through (D) of paragraph (2) of this subsection; and

''(bb) any reference to a 'violation of subsection (a)' contained in that section shall be considered to be a reference to a violation of paragraph (2) of this section.

''(iii) STATUTE OF LIMITATIONS.—An action under this subparagraph shall be commenced by not later than 180 days after the date on which—

''(I) the alleged violation occurs; or

''(II) the applicable employee became aware of the violation.

''(iv) JURY TRIAL.—A party to an action under this subparagraph shall be entitled to trial by jury.

''(4) NONENFORCEABILITY OF CERTAIN PROVISIONS WAIVING RIGHTS AND REMEDIES OR REQUIRING ARBITRATION OF DISPUTES.—

''(A) WAIVER OF RIGHTS AND REMEDIES.—The rights and remedies provided under this subsection may not be waived by any agreement, policy, form, or condition of employment, including by a predispute arbitration agreement.

''(B) PREDISPUTE ARBITRATION AGREEMENTS.—No predispute arbitration agreement shall be valid or enforceable if the agreement requires arbitration of a dispute arising under this subsection.''.

SA 1429. Mr. HEINRICH (for himself and Mr. GARDNER) submitted an amendment intended to be proposed to amendment SA 1407 submitted by Ms. MURKOWSKI and intended to be proposed to the bill S. 2657, to support innovation in advanced geothermal research and development, and for other purposes; which was ordered to lie on the table; as follows:

At the end, add the following:

TITLE IV—AMENDMENTS TO THE INTERNAL REVENUE CODE OF 1986

SEC. 4001. ENERGY CREDIT FOR ENERGY STORAGE TECHNOLOGIES.

(a) IN GENERAL.—Subclause (II) of section 48(a)(2)(A)(i) of the Internal Revenue Code of 1986 is amended by striking ''paragraph (3)(A)(i)'' and inserting ''clause (i) or (viii) of paragraph (3)(A)''.

(b) ENERGY STORAGE TECHNOLOGIES.—Subparagraph (A) of section 48(a)(3) of the Internal Revenue Code of 1986 is amended by striking ''or'' at the end of clause (vi), by adding ''or'' at the end of clause (vii), and by adding at the end the following new clause:

''(viii) equipment which receives, stores, and delivers energy using batteries, compressed air, pumped hydropower, hydrogen storage (including hydrolysis), thermal energy storage, regenerative fuel cells, flywheels, capacitors, superconducting magnets, or other technologies identified by the Secretary in consultation with the Secretary of Energy, and which has a capacity of not less than 5 kilowatt hours,''.

(c) PHASEOUT OF CREDIT.—Paragraph (6) of section 48(a) of the Internal Revenue Code of 1986 is amended—

(1) by striking ''ENERGY'' in the heading and inserting ''AND ENERGY STORAGE''; and

(2) by striking ''paragraph (3)(A)(i)'' both places it appears and inserting ''clause (i) or (viii) of paragraph (3)(A)''.

(d) EFFECTIVE DATE.—The amendments made by this section shall apply to property placed in service after December 31, 2019.

SEC. 4002. RESIDENTIAL ENERGY EFFICIENT PROPERTY CREDIT FOR BATTERY STORAGE TECHNOLOGY.

(a) IN GENERAL.—Subsection (a) of section 25D of the Internal Revenue Code of 1986 is amended by striking ''and'' at the end of paragraph (4), by inserting ''and'' after the comma at the end of paragraph (5), and by adding at the end the following new paragraph:

''(6) the qualified battery storage technology expenditures,''.

(b) QUALIFIED BATTERY STORAGE TECHNOLOGY EXPENDITURE.—Subsection (d) of section 25D of the Internal Revenue Code of 1986 is amended by adding at the end the following new paragraph:

''(6) QUALIFIED BATTERY STORAGE TECHNOLOGY EXPENDITURE.—The term 'qualified battery storage technology expenditure' means an expenditure for battery storage technology which—

''(A) is installed on or in connection with a dwelling unit located in the United States and used as a residence by the taxpayer, and

''(B) has a capacity of not less than 3 kilowatt hours.''.

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to expenditures paid or incurred in taxable years beginning after December 31, 2019.

SA 1430. Ms. CANTWELL submitted an amendment intended to be proposed to amendment SA 1407 submitted by Ms. MURKOWSKI and intended to be proposed to the bill S. 2657, to support innovation in advanced geothermal research and development, and for other purposes; which was ordered to lie on the table; as follows:

At the end of subtitle H of title I, add the following:

SEC. 18____. METHANE LEAK DETECTION AND MITIGATION.

(a) IN GENERAL.—Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16291 et seq.) (as amended by section 1405(a)) is amended by adding at the end the following:

''SEC. 969B. METHANE LEAK DETECTION AND MITIGATION.

''(a) IN GENERAL.—The Secretary, in consultation with the Administrator of the Environmental Protection Agency and the heads of other appropriate Federal agencies, shall carry out a program of methane leak detection and mitigation research, development, demonstration, and commercial application for technologies and methods that significantly reduce methane emissions (referred to in this section as the 'program').

''(b) REQUIREMENTS.—In carrying out the program, the Secretary shall—

''(1) develop cooperative agreements with State or local governments or private entities to provide technical assistance—

''(A) to prevent or respond to methane leaks, including detection, mitigation, and identification of methane leaks throughout the natural gas infrastructure (including natural gas storage, pipelines, and natural gas production sites); and

''(B) to protect public health in the event of a major methane leak;

''(2) promote demonstration and adoption of effective methane emissions reduction technologies in the private sector;

''(3) in coordination with representatives from private industry, State and local governments, and institutions of higher education, create a publicly accessible resource for best practices in the design, construction, maintenance, performance, monitoring, and incident response for—

''(A) pipeline systems;

''(B) wells;

''(C) compressor stations;

''(D) storage facilities; and

''(E) other vulnerable infrastructure;

''(4) identify high-risk characteristics of pipelines, wells, and materials, geologic risk factors, or other key factors that increase the likelihood of methane leaks; and