CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE

May 19, 2010

H.R. 5026
Grid Reliability and Infrastructure Defense Act

As ordered reported by the House Committee on Energy and Commerce on April 15, 2010

SUMMARY

H.R. 5026 would amend existing law regarding the regulation of electric power transmission facilities. Under current law, most of the standards governing the reliability of the bulk-power system are issued by the Electric Reliability Organization (ERO), subject to approval and enforcement by the Federal Energy Regulatory Commission (FERC). This bill would set deadlines for FERC to issue standards regarding the security of computer networks used in electric power transmission (known as cybersecurity) and other risks to the electric power transmission grid, subject to certain conditions. In addition, both FERC and ERO would be directed to ensure that utilities maintain adequate supplies of large electrical transformers and implement measures to protect their systems against geomagnetic storms (incidents involving solar radiation). Other provisions would authorize a new technical assistance program related to grid security and establish terms and procedures for responding to emergencies, protecting information, and identifying strategically important electric facilities.

CBO estimates that implementing this bill would increase net direct spending by about $5 million over the 2011-2015 period and $40 million over the 2011-2020 period.[1] Implementing the bill would increase discretionary spending by $219 million over the 2011-2015 period. CBO estimates that enacting this bill would not affect revenues.

Pay-as-you-go procedures apply because enacting the legislation would affect direct spending.

H.R. 5026 would impose intergovernmental and private-sector mandates, as defined in the Unfunded Mandates Reform Act (UMRA), on owners and operators of electric

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1. Enacting H.R. 5026 would not increase direct spending over the 2010-2014 period and would increase direct spending by $33 million over the 2010-2019 period.

infrastructure and a private-sector mandate on ERO. Because of uncertainty about the number of entities affected, the scope of future regulations, and the implementation timeline, CBO cannot determine whether the aggregate cost of the mandates in the bill would exceed the annual thresholds established in UMRA for intergovernmental or private-sector mandates ($70 million and $141 million in 2010, respectively, adjusted annually for inflation).

CBO has not reviewed a provision that would provide FERC with emergency authority to protect the electric transmission grid from security threats for intergovernmental or private-sector mandates. Section 4 of UMRA excludes from the application of that act any legislative provisions that are necessary for national security. CBO has determined that the provision falls within that exclusion.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of H.R. 5026 is shown in the following table. The costs of this legislation fall within budget function 270 (energy).

	By Fiscal Year, in Millions of Dollars					
	2011	2012	2013	2014	2015	2011-2015
CHANGES IN DIRECT SPENDING [a]						
Estimated Budget Authority	0	0	0	0	5	5
Estimated Outlays	0	0	0	0	5	5
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Federal Power Agencies						
Estimated Authorization Level	0	0	0	4	10	14
Estimated Outlays	0	0	0	4	10	14
Department of Energy						
Estimated Authorization Level	50	51	51	52	52	256
Estimated Outlays	19	39	45	50	52	205
Total Changes						
Estimated Authorization Level	50	51	51	56	62	270
Estimated Outlays	19	39	45	54	62	219

a. CBO estimates that enacting the bill would increase direct spending by $40 million over the 2011-2020 period.

BASIS OF ESTIMATE

For this estimate, CBO assumes that the legislation will be enacted near the end of fiscal year 2010, that the necessary funds will be appropriated each year, and that spending patterns will be consistent with historical trends for similar activities.

Background

Taken together, four federal agencies own and operate about 15 percent of the nation's electric power grid, providing much of the transmission service in certain regions of the country. Capital expenditures for the federally owned transmission grid totaled about $645 million in 2009. Most of those costs were incurred by the Tennessee Valley Authority (TVA) and Bonneville Power Administration (BPA). Spending by TVA and BPA affects direct spending because those agencies are authorized to collect and spend proceeds from the sale of electricity and to borrow funds to finance capital projects. In contrast, the Western Area Power Administration (WAPA) and Southwestern Power Administration (SWPA) rely on annual appropriations for capital investments in transmission reliability measures. Regardless of the method of financing, the federal power agencies are required by law to set electricity prices high enough to recoup capital investments over the useful life of the assets.

CBO estimates that H.R. 5026 would increase both direct spending and spending subject to appropriation for additional capital investments by federal power agencies. CBO estimates that other provisions of the bill would further increase spending subject to appropriation.

Additional Capital Spending by Federal Power Agencies (Direct Spending and Spending Subject to Appropriation)

The budgetary impacts of this legislation on the federal power agencies would depend on the scope and substance of future regulations that are developed to implement it. FERC and ERO would be directed to require utilities to address various threats, taking into consideration the likelihood of those events and the cost-effectiveness of any mitigation measures. Given the lead times involved in changing standards for electric utilities, CBO expects that most of the budgetary impacts resulting from those rules would occur after 2014 and would involve only modest changes in performance standards through 2020.

Assuming appropriation of the necessary amounts, CBO estimates that implementing H.R. 5026 would increase discretionary spending by WAPA and SWPA by $14 million over the 2011-2015 period, and additional amounts thereafter. In addition, we estimate that additional capital spending by TVA and BPA would increase direct spending by about $40 million, net of recoveries from ratepayers, over the 2011-2020 period.

Acquiring Additional Transformer Capacity. CBO expects that the regulations developed under this bill for large transformers would initially mirror the requirements of the industry's existing voluntary program for sharing spare transformers in the event of a terrorist attack. CBO estimates that complying with those benchmarks would have a negligible effect on spending by TVA, BPA, and SWPA because those agencies have sufficient spare transformers to meet the voluntary guidelines. In contrast, we estimate that WAPA would spend about $12 million over the 2011-2015 period to acquire additional transformers, assuming appropriation of the necessary amounts. Additional costs would occur after 2015 for WAPA. Costs for all of the agencies could be higher if the new rules require utilities to increase the number of spare transformers, which cost between $1 million and $15 million each.

Mitigating Other Risks to Transmission Systems. Currently, there are no standards that address risks posed by natural or malicious disruptions to the grid, such as geomagnetic storms and electromagnetic pulses from weapons. As a result, CBO expects that directives addressing those threats would increase capital spending by the federal power agencies. Government reports have identified various actions that could be taken to mitigate those risks, with costs for the entire industry estimated to range from a few hundred million dollars (for example, for equipment that protects generators or transformers) to over a billion dollars (for example, for comprehensive strategies for the utility industry). For this estimate, CBO assumes that near-term measures would primarily involve small upgrades to equipment and facilities and would increase capital spending on bulk power facilities by less than 1 percent annually. On that basis, CBO estimates that those investments would increase net direct spending by TVA and BPA by about $40 million over the 2011-2020 period, and discretionary spending for WAPA and SWPA by about $2 million over the 2011-2015 period.

Finally, CBO estimates that other provisions in the bill concerning the security of computer networks used by the federal power agencies would have a negligible budgetary impact because the new standards would be similar to those followed by federal agencies as a result of other statutory directives.

Other Impacts on Spending Subject to Appropriation

H.R. 5026 would direct the Secretary of Energy to establish a new technical assistance program related to grid security. According to the Department of Energy (DOE), the proposed program would build on existing efforts related to cybersecurity (currently funded at around $40 million annually) and would focus in particular on developing technologies to mitigate risks associated with geomagnetic storms or certain malicious acts. The bill would direct DOE to establish an outreach program to share expertise developed through those activities. Finally, H.R. 5026 would establish new requirements related to security clearances and sharing sensitive information on grid security among federal agencies.

Based on information from DOE, CBO estimates that those activities would cost about $200 million over the 2011-2015 period, with additional spending occurring in later years. That estimate is based on the cost of similar programs and reflects historical spending patterns for activities related to research, development, and technical assistance.

In addition, CBO expects that implementing H.R. 5026 would expand FERC's workload and increase the agency's administrative costs, which are controlled through annual appropriation acts. Because FERC recovers 100 percent of its costs through user fees, any such increases in its costs would be offset by an equal change in fees that the commission charges, resulting in no net budgetary impact.

PAY-AS-YOU-GO CONSIDERATIONS

The Statutory Pay-As-You-Go Act of 2010 establishes budget reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays that are subject to those pay-as-you-go procedures are shown in the following table.

CBO Estimate of Pay-As-You-Go Effects for H.R. 5026 as ordered reported by the House Committee on Energy and Commerce on April 15, 2010

	By Fiscal Year, in Millions of Dollars												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2010-2015	2010-2020
NET INCREASE OR DECREASE (-) IN THE DEFICIT													
Statutory Pay-As-You-Go Impact	0	0	0	0	0	5	7	7	7	7	7	5	40

INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

H.R. 5026 would impose intergovernmental and private-sector mandates, as defined in UMRA, on owners and operators of electric infrastructure and a private-sector mandate on the Electric Reliability Organization. Because of uncertainty about the number of entities affected, the scope of future regulations, and the implementation timeline, CBO cannot determine whether the aggregate cost of the mandates in the bill would exceed the annual thresholds established in UMRA for intergovernmental and private-sector mandates ($70 million and $141 million in 2010, respectively, adjusted annually for inflation).

CBO has not reviewed a provision that would provide FERC with emergency authority to protect the electric transmission grid from security threats for intergovernmental or private-sector mandates. Section 4 of UMRA excludes from the application of that act any legislative provisions that are necessary for national security. CBO has interpreted that exclusion to encompass provisions dealing with activities that are immediately necessary to protect vital national security interests. CBO has determined that the provision dealing with emergency authority falls within the exclusion for national security.

Mandates That Apply to Both Public and Private Entities

By requiring ERO and FERC to issue new standards to address vulnerabilities in the nation's energy grid, the bill would impose mandates on public and private owners and operators of electric infrastructure. The standards would address vulnerabilities related to cybersecurity, disruptions related to geomagnetic or electromagnetic events and unexpected losses of large transformers. Based on information from FERC and industry sources, the cost of complying with each of the mandates could equal tens of millions of dollars annually, depending on the scope and implementation timeline of future regulations. Because of those uncertainties, however, CBO cannot estimate the total costs of the mandates.

Cybersecurity. The bill would require owners and operators of electric infrastructure to implement measures to mitigate the risk to the power grid from cybersecurity vulnerabilities. FERC would establish the standards for cybersecurity and implementation timelines after an assessment of current standards.

Geomagnetic Storms and Electromagnetic Pulse Events. The bill would require owners and operators of electric infrastructure to protect against risks posed by natural or malicious disruptions to the grid resulting from geomagnetic storms or electromagnetic pulse events. Based on information from government reports, potential mitigation measures could involve significant capital investments in equipment and facilities.

Large Transformers. The bill would require owners and operators of large transformers to maintain an adequate supply of spare transformers in order to restore the reliability of the power grid if any transformer is disabled. The number of spare transformers required by the bill would depend on future regulations.

Mandate That Applies to Public Entities Only

The bill would preempt state, local, and tribal laws relating to the disclosure of information or records. Those preemptions would be intergovernmental mandates as defined in UMRA, but CBO estimates that they would impose no duty on states that would result in additional spending.

Mandate That Applies to Private Entities Only

Under current law, FERC has the authority to require the ERO to develop reliability standards. The bill would impose a private-sector mandate by requiring ERO to develop standards earlier than it would have under current law. Based on information from ERO, CBO estimates that the cost to develop the standards would be small in relation to the annual threshold for private-sector mandates.

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