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FISCAL IMPACT REPORT

SPONSOR <u>Senate Floor</u>	LAST UPDATED <u>3/15/23</u> ORIGINAL DATE <u>3/6/23</u>
SHORT TITLE <u>Energy Storage Development & Planning</u>	BILL NUMBER <u>CS/CS/Senate Bill 456/SCONCS/aSTBTC/SFICS</u>
ANALYST <u>J. Torres</u>	

ESTIMATED ADDITIONAL OPERATING BUDGET IMPACT* (dollars in thousands)

	FY23	FY24	FY25	3 Year Total Cost	Recurring or Nonrecurring	Fund Affected
	No fiscal impact	Indeterminate but minimal	Indeterminate but minimal			

Parenteses () indicate expenditure decreases.
 *Amounts reflect most recent version of this legislation.

Relates to House Bill 273

Sources of Information

LFC Files

Responses Received From

New Mexico Attorney General (NMAG)
 Public Regulation Commission (PRC)
 Energy, Minerals and Natural Resources Department (EMNRD)
 Renewable Energy Transmission Authority (RETA)

SUMMARY

Synopsis of SFICS for Senate Bill 456

The Senate floor substitute for Senate Bill 456 (SB456/SFICS) finalizes the bill in a manner which promotes the more efficient execution of its essential terms.

Section 2(A) now reads as follows: “The commission shall adopt a target for energy storage deployment brought to commercial operation after December 31, 2022.” By replacing the term “New Mexico” with the more specific “commission,” the substitute clearly designates the appropriate agency to perform the delegated function. The commission’s adoption of a target for energy storage deployment will occur as of December 31, 2022, rather than allowing for the prior one-year gap to December 31, 2023. Section 2(B) now states: “The megawatt and megawatt-hour targets specified in Subsection A of this section may be adjusted based on analysis conducted by the commission. The commission may also establish additional energy storage deployment targets.” The term “may be adjusted” better describes how the commission’s analysis will take place. Section 2(C) states in part: “The amount of energy storage capacity that an individual qualifying utility may be required by the commission to procure or deploy.” This

sentence revises the placement of the term “by the commission” in to better meet its intent. The same section adds: “In making such a determination, the commission shall consider potential impacts of proposed energy storage systems on public health and safety.” This important bill modification references its potential impact on public health and safety. These closely tailored modifications serve to better meet the bill’s purpose and intent.

The Senate Tax, Business and Transportation Committee amendments to Senate Bill 456 reduce the proposed Section 2(A) December 31, 2028, deployment target from “four thousand” to “three thousand five hundred megawatt-hours of electricity.” Consequently, the December 31, 2033, cumulative storage capacity is reduced from “eight thousand” to “seven thousand megawatt-hours of electricity.” Section 2(B) substitutes the word “adjusted” for the prior word “increased.” This amendment allows for target flexibility based on commission analysis. The STBTC amendment to Section 2(E) is underlined as follows:

Each qualifying utility shall petition the commission for necessary approvals to construct or acquire the energy storage systems to achieve its required procurement or deployment of energy storage capacity. A qualifying utility that undertakes energy storage system projects approved by the commission may recover its reasonable costs through an approved tariff rider or in base rates, or through a combination of both.

This amendment allows for reasonable cost recovery by the “qualifying utility” by either a tariff rider, base rate adjustment, or a combination of both. The modification describes the manner in which the utility may be compensated for its reasonable costs and how that is to be reflected in an approved tariff, base rate adjustment or a combination of both.

Proposed Section 2(F) modifies the energy storage target qualification date from “December 31, 2023” to December 31, 2022. This removes the time gap for utility target qualification.

The Senate Conservation Committee substitute for Senate Bill 456 modifies several provisions of the prior bill. Section 1(A) now provides that the Investor Owned Utility (IOU) will file a grid modification plan with the commission pursuant to its rules. That plan will include: “evaluation metrics as determined by the commission, which may include measures of cost-effectiveness and reliability of the distribution grid and how the plans are consistent with the state’s roadmap for grid modernization.” Section 1(B) requires that the commission enact these rules as of October 1, 2024. Rural cooperatives are again exempted from these requirements.

Section 2(A) requires that the energy storage deployment targets be put into commercial operation as of December 31, 2022. One thousand megawatts of energy storage capacity with a cumulative delivery of four thousand megawatt hours of electricity will be achieved as of December 31, 2028. This capacity will be doubled as of December 31, 2033. The commission may: increase these targets based on its analysis; establish additional targets and determine the amount of storage required for each IOU. The commission shall: “require qualifying utilities to incorporate the amount of energy storage capacity that an individual qualifying utility may be required to procure or deploy by the commission into integrated resource plans pursuant to the Efficient Use of Energy Act, grid modernization plans pursuant to Section 1 of this 2023 act, or renewable energy plans pursuant to the Renewable Energy Act, as determined by the commission and starting with planning cycles commencing after July 1, 2023.” Each IOU will petition the commission for necessary energy storage system construction or acquisition. All storage systems installed as of December 31, 2023 shall qualify towards these targets. The substitute again defines: “deploy,” “deployment,” “energy storage capacity,” “energy storage

system,” “procure,” and “qualifying utility.”

The effective date of this bill is July 1, 2023.

FISCAL IMPLICATIONS

PRC stated about an earlier version of the bill:

While there is no direct cost to the PRC to implement this bill. It will require additional analysis and review of the PRC in both the IRP process and in subsequent Certificate of Public Convenience and Necessity (CCN) proceedings for approval. It may also have an impact on the generation capacity portfolios of the state’s electric utilities, and thus have a substantial impact on their cost of service, and consequently rates paid by customers for electricity.

In addition to increased battery storage costs, it will require additional renewable generation and transmission system upgrades that will also increase costs.

RETA stated about an earlier version of the bill:

To implement this bill the PRC may need additional operational funding to conduct a rulemaking to revise the IRP rule and to administer tracking and approval of utilities progress with the storage performance targets.

SIGNIFICANT ISSUES

EMNRD stated about an earlier version of the bill:

Grid Modernization Plans

Overall, EMNRD finds that SB 456/cs supports the goals of the 2020 Grid Modernization Act, much as HB 243/cs does. The structure of the grid modernization plans called for in SB 456/cs support the state’s overall grid modernization goals, and allows for further policymaking decisions regarding the shape of New Mexico’s future grid to be made at the state, PRC, and federal levels, and for the PRC to establish through rulemaking a process for utilities to submit grid modernization plans.

EMNRD does, on the other hand, repeat our previous comments that SB 456/cs – as with HB 243/cs – may be duplicative of parts of the Grid Modernization Act of 2020. That Act created a mechanism by which utilities could present applications to the PRC for cost recovery for grid modernization projects. The plans required by SB 456/cs could result in duplicative work for both the PRC staff and the submitting utility. However, the rulemaking process required from the PRC may mitigate this potential duplication.

Energy Storage

Many states have recently adopted energy storage targets or mandates, including Maine, Nevada, California, and New Jersey (targets) and Oregon, Virginia, and New York (mandates). SB456/cs would add New Mexico to the first group. Energy storage is a vital part of building a modernized electric grid for New Mexico, and targets can signal this importance to utilities, industry, and regulators in the state. Developing an energy storage target was a possible goal defined in EMNRD’s 2021 Grid Modernization energy storage white paper.

While the energy storage targets in SB456/cs seem to align with targets which have been adopted in other states, it is worth pointing out that recent studies, and the regulation set by the California CPUC, highlight that the bulk of installed energy storage should be long-duration storage¹. SB456/cs does not call out this important nuance.

PRC stated about an earlier version of the bill:

Total electricity capacity resources for peak needs of the three IOUs in New Mexico, after adjusting for load factor and outages, is about 4,000 MW. Adding 1,000 MW of battery storage would increase existing capacity resources by 25 percent.

Utility scale battery storage costs vary widely and have gone up recently. Prices in a 2022 RFP in New York averaged \$567/kWh. This would put the overall capital cost for 1,000 MW of battery storage (4-hour lithium-ion battery storage system) at \$567/kWh x 4 hours = \$2,268/kW x 10⁶ kWh = \$2.3 billion.

Some have forecasted prices at the end of the decade to drop to \$150-\$200/kWh. Using this forecast, the cost of the second 1,000 MW would be around \$0.7 billion putting the total estimated costs of 2,000 MW at \$3 billion.

The purpose of an IRP is to determine future electric needs and create a plan to meet those needs. It looks at both demand side resources (conservation, efficiency etc.) and supply side resources (generation, transmission, battery storage etc.).

Traditionally, the supply side portfolio has considered least-cost energy sources. Battery storage offers the most flexibility in meeting load but is also currently among the most expensive. Requiring a large, fixed amount of battery storage in the IRP will not result in the least cost solution or the optimal mix of resources. For example, charging 100 MW of battery storage will require 400 MW of solar energy at a 25 percent capacity factor. 1,000 MW and 2,000 MW of battery storage will require a large build out of solar and wind resources as well as system upgrades.

At the same time, a large build out of solar and wind resources will displace existing coal and natural gas generation resources before the periods forecasted in the current IRPs. This may result in stranded costs for the utilities, much of which would likely be borne by the consumer.

RETA stated about an earlier version of the bill:

Energy storage will be needed on New Mexico's future grid as more fossil fuel power plants continue to be retired and as wind and solar development continues growing. Storage will be essential to couple with renewables, to support the grid when solar resources recede in the evening and wind patterns change. With little storage on New Mexico's grid now, SB456 is a good start in directing New Mexico's largest utilities to plan for future reliance on renewables for electricity. Other states have energy storage

¹ Statistical modelling and forecasting analysis by Strategen Consulting and the California Energy Storage Alliance has shown that to meet the 2045 target and a 60% renewable energy by 2030 interim goal, from 2025 onwards, the [majority of energy storage deployed in the state needs to be long-duration](https://www.energy-storage.news/rfp-issued-for-500mw-pumped-hydro-energy-storage-in-california/). New project RFP: <https://www.energy-storage.news/rfp-issued-for-500mw-pumped-hydro-energy-storage-in-california/>

targets, including California, Oregon, and Nevada in the western US.

It is projected in a recent RETA report that 525 MW of energy storage could be deployed in New Mexico by 2030, based on development pace in other parts of the world.² Battery storage technology is the most likely economic opportunity for the utilities. The utilities are stating planned storage projects in cases before the PRC but, while encouraging, utilities have cancelled several storage projects to date for various reasons.

PERFORMANCE IMPLICATIONS

RETA stated:

The performance parameters in the ratio of 4,000 MWh output to 1,000 MW capacity, or 4:1 output/capacity ratio, yields a time duration of 4 hours under maximum output conditions. This is considered short-duration storage and is the current market capability of cost-effective, deployable battery storage. For the two target years at five-year intervals, 2028 and 2033, the storage performance parameters reflect gradual linear growth of 4-hour duration storage.

SB456 would be a sensible policy to implement to support development of a mature short-duration storage market in New Mexico by at least 2033. This would be significant in relation to the requirements of the Energy Transition Act (ETA), whereby each utility is to attain a 50 percent Renewable Portfolio Standard (RPS) by 2030. This RPS target could possibly be met by transmission development alone, without storage development through the 2030 timeframe. RETA found in its original 2020 Transmission Study³ that transmission lines are expected to be more cost-effective to develop than storage for the remainder of the current decade. The 2028 target of SB456 would help initiate the utility-scale storage market in New Mexico.

However, for utilities to attain the 2040 requirement of 80 percent RPS, energy storage will be essential. Achieving the 2,000 MW/8,000 MWh targets by 2033 would provide a good initial boost for climbing up to the storage capacities utilities will need by 2040. By then, storage will be instrumental in utilizing renewable energy that would otherwise be wasted, curtailed⁴ generation.

Also by 2040, long-duration storage of 8 hours or more will be needed. Unfortunately, at this time the market is difficult to project as to when the storage market will move up to cost-effective, deployable long-duration storage. After attaining the ETA and SB456 targets in the early 2030s, New Mexico utilities will have the 2033-2040 timeframe to integrate more advanced storage technologies with the higher 80 percent RPS.

The current technology that can be deployed to meet the performance targets given is battery storage. Battery storage facilities are currently available with packaged modules

² NM RETA, 2022. New Mexico In-state Energy Storage: Market Status and Anticipated Growth, prepared for New Mexico Renewable Energy Transmission Authority by Kalmia Consultants, LLC, Santa Fe NM.

³ NM RETA, 2020. New Mexico Renewable Energy Transmission and Storage Study, prepared for NM RETA by ICF Resources, LLC, Reston VA.

⁴ Curtailment is the action of reducing or restricting something, as with solar and wind providing generation in excess of what homes and businesses need.

that can be scaled to meet the utilities’ needs at selected points on the grid. These points could include solar farm interconnections, substations, and retired coal plants. SB456 allows a wide range of storage systems that are commercially available and can use any technology (“...chemical, thermal, mechanical or other means”). Battery storage is in the chemical category.

ADMINISTRATIVE IMPLICATIONS

PRC stated about an earlier version of the bill:

The bill will have a widespread impact on the workload of the PRC. This includes the IRP process, rate cases requests, review of PPAs, CCNs, system upgrades and so on.

TECHNICAL ISSUES

PRC stated:

The bill implies 4-hour storage technology, which is the current standard. There is significant research underway into longer duration storage technologies.

OTHER SUBSTANTIVE ISSUES

PRC stated:

The PRC has location control review over electricity plants, facilities and transmission lines. Current battery storage projects have been co-located with solar projects. Under this bill, stand-alone utility scale battery projects do not fall under the Section 62-9-3 Location Control statute. 2,000 MW of battery storage would result in numerous stand-alone projects (e.g., forty 50 MW projects or twenty 100 MW projects). The location control statute may need to be amended to include battery storage projects.

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