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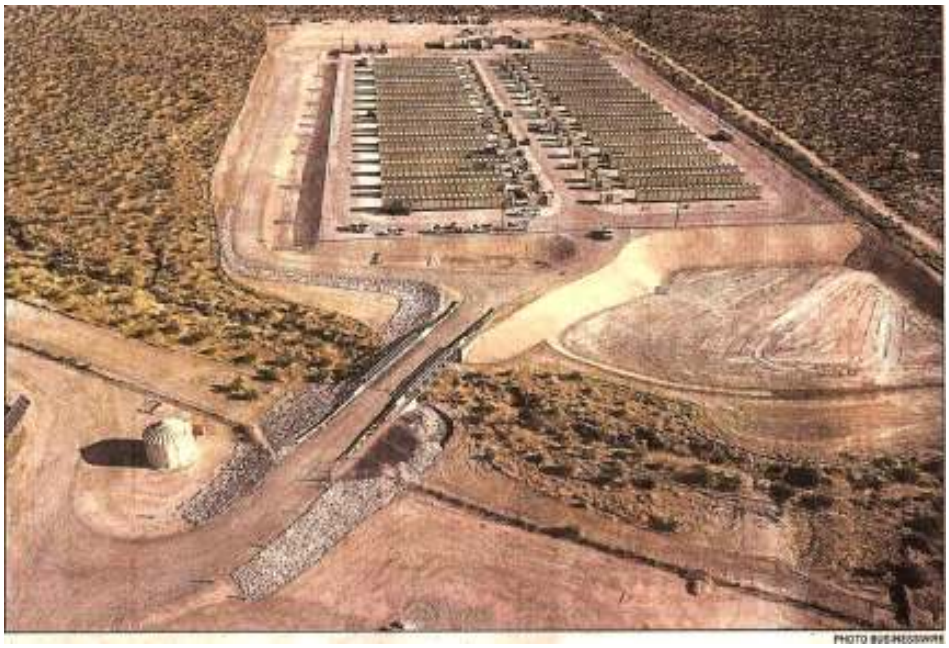
ENERGY

High costs, hidden risks of Mass. battery mandate

By Laurie Belsito



Last November, the legislature passed an energy bill that, among other things, requires a massive build-out of large battery energy storage systems (BESS). We are now seeing the wheels in motion as the first requirements of this battery mandate come into play. The Department of Energy Resources (DOER) is moving to "facilitate" the rapid deployment of billions of dollars' worth of grid battery projects. At a time when utility bills are already a top concern for working families, it's worth noting that ratepayers will foot much of this bill, though exactly how remains unclear. The basic premise that these batteries support the alternative energy transition is false. This bureaucrat-mandated program is a feel-good gesture that will be very expensive and locally dangerous.

The deal itself is rather strange. The law says "…every distribution company shall, in coordination with the department of energy resources, jointly and competitively solicit proposals for energy storage systems…"

At first glance, it sounds like utilities are buying these giant battery energy storage systems, but the fine print says otherwise. They are not buying batteries, or even the electricity those batteries might deliver in this initial round. What they, and ultimately ratepayers, are actually buying are the so-called Renewable Energy Certificates (RECs) these batteries will receive when they output electricity. They may also buy federal tax credits and other so-called "environmental attributes" under the law.

In other words, part of the purchase is simply subsidies. The idea is that this financial support will spur developers to build a huge amount of storage in Massachusetts. Under the new law, the first Request for Proposals, covering up to 1,500 MW of BESS, was just issued.

But the concept is fundamentally nonsensical. Wind and solar generators get RECs when they produce electricity, but batteries do not produce power, they only store energy (at a loss) that was generated somewhere else.

There are two possible ways these massive batteries and their RECs could

operate. In the first, the stored electricity comes from fossil fuels. In that case, battery RECs would essentially be awarded for fossil-fueled energy. After all, Massachusetts imports much of its electricity from fossil fuels. In 2023, Massachusetts generated just under 20 million MWh of electricity, 63% of it from natural gas, while consuming more than 50 million MWh overall. That means most of the battery input electricity will likely be fossil-based.

On the other hand, if the batteries do store renewable energy, those renewables have already received RECs. That amounts to double-counting. In neither case should battery output qualify for RECs that ratepayers must pay for.

The costs don't stop there. Buying the environmental attributes does not cover the cost of the actual BESS, it's only a stimulus payment. These batteries will still be operated as money-making projects, with owners expecting full cost recovery plus profit. All of that will come from ratepayers.

The price tag is staggering. The initial 1,500 MW alone will cost many billions of dollars. These are 30-year purchase contracts, yet a typical BESS lasts only about 10 years, meaning full replacement costs, possibly multiple times, are inevitable. And this is only the beginning: the new law mandates an incredible 5,000 MW of storage procurement over the next three years.

There is also deep ambiguity that makes costs unpredictable. The law specifies MW (megawatts) of discharge capacity, not storage capacity, which is measured in MWh (megawatt hours). It allows a range of 4 to 10 MWh of storage per MW of discharge. That means the 1,500 MW could represent anywhere from 6,000 to 15,000 MWh of storage and cost is determined by MWh, since that dictates the volume of chemicals required. We may not know the true cost until bids are in and contracts awarded.

Then comes the question of location. Every project must have a site. The allowable size range is 40 to 1,000 MW. In layman's terms, it ranges from very large to enormous. The biggest battery complex in the country today is under 800 MW. Even a 40 MW project would mean about 40 tractor-trailer sized battery containers. At the smaller end, the state could see more than three dozen such projects scattered across communities. And as towns are discovering, the new law makes it harder for locals to stop them.

Safety is another major concern. Despite improvements in technology, container-sized batteries can burn or explode without warning, with one incident triggering others in a chain reaction. This phenomenon, called thermal runaway, is dangerous and difficult to contain. The well-known Moss Landing fire involved just 350 MW, yet its flames could be seen for miles.

The RFP says very little about safety beyond generic "be safe" boilerplate. For example, there are no restrictions on placing massive battery complexes near population centers or vulnerable infrastructure. This should be a serious consideration in project selection.

Overall, this mandated battery program is costly, unnecessary, and locally hazardous. It's time for the legislature to put ratepayers first and pass energy policy with their best interest in mind, not feel-good bureaucratic experiments.

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