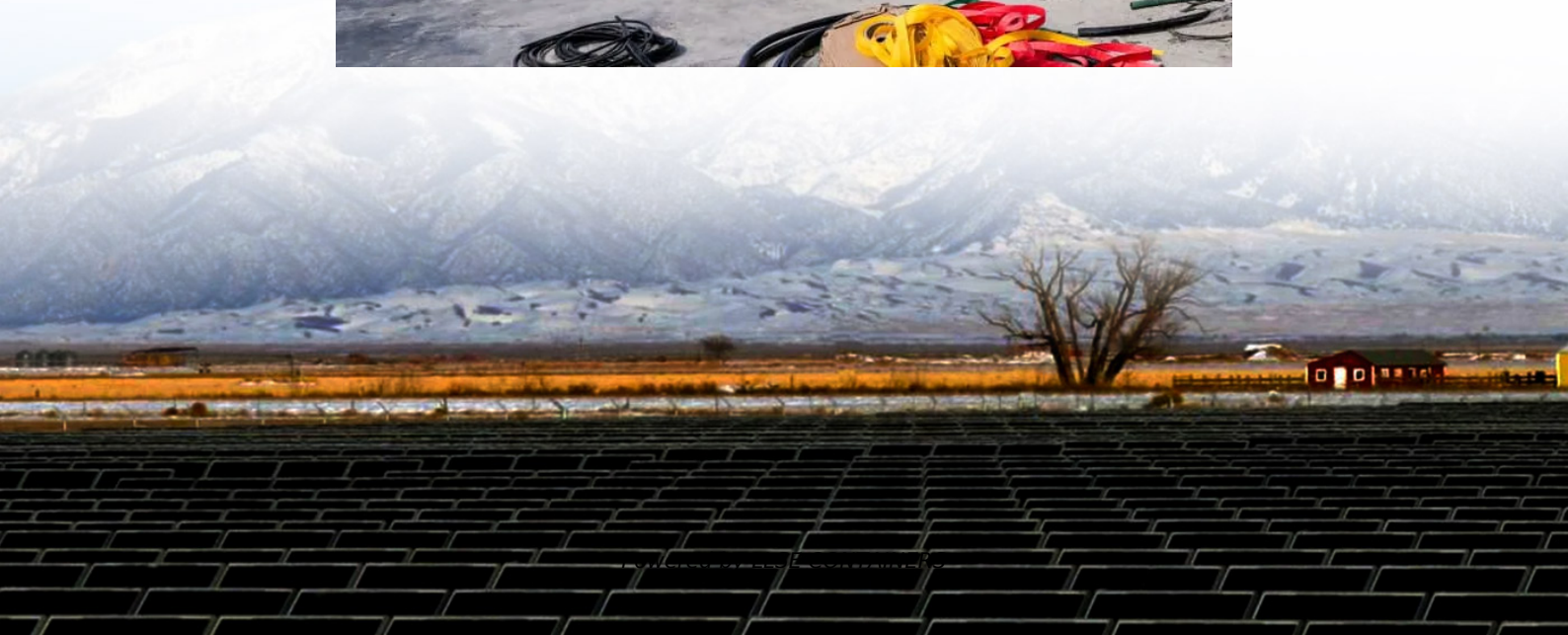


# **Product reserves and product energy storage**





## Overview

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Will introducing an operating reserve product deliver material operational benefits?

It is unclear whether introducing an operating reserve product will deliver material operational benefits to the NEM in light of the revenue risks, complexity, and implementation and ongoing costs associated with a new market. Instead, existing mechanisms may be able to deliver sufficient upwards flexibility, particularly if they can be augmented:

Can reserve products help balancing energy transition requirements?

Reserve products could also be used to procure sustained downwards flexibility. Across several power systems with market frameworks, policy-makers are proposing that balancing flexibility requirements emerging during energy transition be addressed through new reserve product markets.

What is activated energy for manual reserves?

The activated energy for manual reserves can be either upward or downward, with a 15 min resolution. Upward energy products consist of an activated percentage of the committed reserve in the balancing reserve market, in addition to new energy products that can be introduced only as energy bid (no capacity).

Can energy storage services improve the performance of an energy storage system?

Annual simulations show that the approach can significantly enhance the performance of an energy storage system (ESS), with a 22.8% revenue increase when combining DA and FCR services, as shown in Table 2.



## Product reserves and product energy storage

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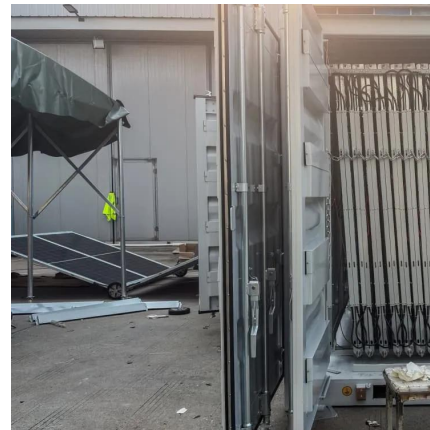


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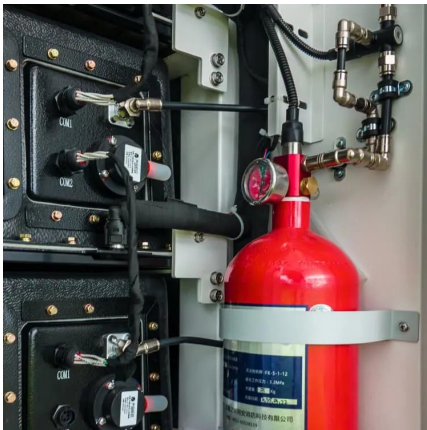
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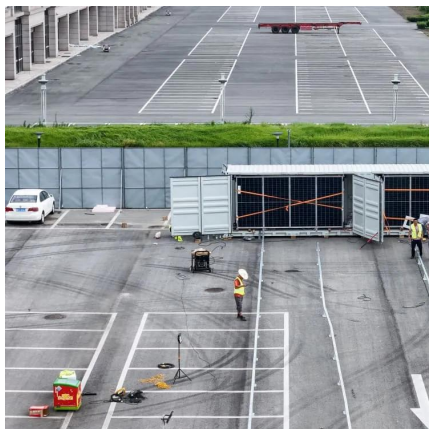
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